EDISON ELECTRIC INSTITUTE BULLETIN

CONVENTION NUMBER

VOLUME II JUNE 1934 NUMBER 6

STATISTICAL DATA OF THE ELECTRIC LIGHT AND POWER INDUSTRY

Compiled Monthly by the Edison Electric Institute—Covers 100% of the Industry

DURING THE MONTH OF APRIL

	1934	1933	%
Kilowatt-hours Generated* (net)			
By Fuel	3,700,034,000	3,111,627,000	+18.9
By Water Power	3,194,637,000	2,881,170,000	+10.9
Total Kilowatt-hours Generated	6,894,671,000	5,992,797,000	+15.0
Additions to Supply			
Energy purchased from other sources	208,847,000	154,221,000	+35.4
Net International Imports	45,617,000	28,099,000	+62.3
Total	254,464,000	182,320,000	+39.6
Deductions from Supply			
Energy used in electric railways departments	54,394,000	55,517,000	− 2.0
Energy used in electric and other departments	116,322,000	94,745,000	+22.8
Total	170,716,000	150,262,000	+13.6
Total Energy for Distribution	**6,978,419,000**	**6,024,855,000**	**+15.8**
Energy Lost in Transmission, Distribution, etc.	**1,136,031,000**	**1,036,771,000**	**+ 9.6**
Kilowatt-hours Sold to Ultimate Consumers	**5,842,388,000**	**4,988,084,000**	**+17.1**
Sales to Ultimate Consumers (kw-hrs)			
Domestic Service	1,025,562,000	979,905,000	+ 4.7
Commercial—Small Light and Power (Retail)	1,059,320,000	984,169,000	+ 7.6
Commercial—Large Light and Power (Wholesale)	3,118,980,000	2,422,684,000	+28.7
Municipal Street Lighting	176,437,000	178,564,000	− 1.2
Railroads—Street and Interurban	355,893,000	318,326,000	+11.8
Railroads—Electrified Steam	59,151,000	52,788,000	+12.1
Municipal and Miscellaneous	47,045,000	51,648,000	− 8.9
Total Sales to Ultimate Consumers	5,842,388,000	4,988,084,000	+17.1
Total Revenue from Ultimate Consumers	$149,851,700	$142,511,600	+ 5.2

DURING TWELVE MONTHS ENDING APRIL 30th

Kilowatt-hours Generated* (net)			
By Fuel	50,657,470,000	44,122,286,000	+14.8
By Water Power	31,462,203,000	30,629,429,000	+ 2.7
Total Kilowatt-hours Generated	82,119,673,000	74,751,715,000	+ 9.9
Purchased Energy (Net)	3,240,608,000	2,628,846,000	+23.3
Energy Used in Electric Railway and Other Departments	1,957,911,000	1,986,966,000	− 1.5
Total Energy for Distribution	83,402,370,000	75,393,595,000	+10.6
Energy Lost in Transmission, Distribution, etc.	**14,598,297,000**	**13,662,090,000**	**+ 6.9**
Kilowatt-hours Sold to Ultimate Consumers	**68,804,073,000**	**61,731,505,000**	**+11.5**
Total Revenue from Ultimate Consumers	$1,794,903,400	$1,777,941,400	+ 1.0
Important Factors			
Percent of energy generated by waterpower	38.3%	41.0%	
Average pounds of coal per kilowatt-hour	1.45#	1.47#	
Domestic Service (Residential Use)			
Average Annual Consumption per Customer (kw-hr)	609	596	+ 2.2
Average Revenue per Kw-hr (Cents)	5.42¢	5.57¢	− 2.7
Average Monthly Bill per Domestic Customer	$2.75	$2.77	− 0.7

BASIC INFORMATION AS OF APRIL 30th

Generating Capacity (kw)—Steam	23,982,100	24,048,200	
—Water Power	9,002,000	8,968,000	
—Internal Combustion	470,100	457,400	
Total Generating Capacity in Kilowatts	33,454,200	33,473,600	
Number of Customers			
Farms in Eastern Area (Included with Domestic)	(507,362)	(503,090)	
Farms in Western Area (Included with Com'l—Large)	(207,167)	(203,222)	
Domestic Service	20,139,047	19,719,228	
Commercial—Small Light and Power	3,687,511	3,651,827	
Commercial—Large Light and Power	523,241	521,039	
All Other Ultimate Consumers	67,764	71,321	
Total Ultimate Consumers	24,417,563	23,963,415	

*By courtesy of the U. S. Geological Survey with deductions for certain plants not considered Electric Light and Power Enterprises.

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EDISON ELECTRIC INSTITUTE BULLETIN

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THE INSTITUTE'S SECOND ANNUAL CONVENTION

The second annual convention of the Edison Electric Institute, held at Atlantic City, N. J., June 4-6, inclusive, provided an opportunity for a survey of the Institute's accomplishments during the first year and a half of its existence, under President Cortelyou's distinguished leadership, and saw the initiation of plans for further broadening and increasing the organization's usefulness under the guidance of Mr. Thomas N. McCarter, its newly elected President.

The convention was one of the most satisfactory meetings that the electric light and power industry has ever held. Practically all of the member companies, and all of the sections of the country, were represented by the 1015 delegates and guests who registered for the convention. The business sessions were well attended. The addresses were all of a practical nature and contained much information and many suggestions of value to the industry. Plans for committee expansion and enlarged activities were completed and authorized, and plans for cooperative promotional enterprises looking toward increased business for this and other industries were initiated or elaborated. Altogether a great deal of constructive work, affecting both the industry at large, and more narrowly, the Institute itself, was accomplished.

The centering of the convention affairs at one hotel, the Traymore, facilitated the informal meetings and discussions which are always a valuable part of a convention, and the pleasant weather conditions further added to the enjoyment of the delegates, of whom a large proportion were senior executives of the industry. Despite the vicissitudes of the past four years the spirit of the industry to push ahead in spite of all obstacles was very evident in the attitude of those present. As epitomized by Mr. Cortelyou, ". . . we shall go forward with resolute determination to make the industry as great in leadership as it is in technical strength, to protect and defend its legal and constitutional rights against unjust aggression, to promote the widest possible use of its service at the least possible cost to every class of consumer, doing our work as well as we know how, striving always for improvement."

Among the important actions at the convention was the decision to increase the number of committees dealing with engineering and technical subjects from three to five. As now constituted, the engineering group will include the Electrical Equipment, the Transmission and Distribution, the Accident Prevention, the Prime Movers and the Hydraulic Power Committees. The Accident Prevention Committee is a new committee, and the Prime Movers Committee and the Hydraulic Power Committee will undertake and enlarge the work of the former Power Generation Committee. The personnel of these and other committees of the Institute will be increased in order to have larger representation of member companies on each of the committees.

Amendments to the Constitution permitting enlargement of the Board of Trustees and the Operating Committee and greater flexibility in the functioning of the Institute were also voted. Three new trustees were elected to the Board and those whose terms expired this year were reelected. The new trustees are Messrs. Louis H. Egan, Frank W. Smith and William H. Taylor.

Papers and addresses at the three general sessions related chiefly to commercial plans and means for increasing kilowatt hour sales, rates and their economic relation to other factors, taxation and engineering and management subjects. The latter papers were treated from the dual objectives of increasing efficiency and lowering operating and investment costs.

Meetings of the Operating Committee, Accounting Committee, Statistical Committee, Sales Committee, Power Generation Committee, Electrical Equipment Committee and Transmission Committee were held during the convention period. An account of the transactions of these committees will be published in the next issue.

Social events at the convention, although limited, were thoroughly pleasant. A reception and tea in honor of Mrs. Cortelyou on Monday afternoon, June 4, was enjoyed by the ladies attending the convention. Informal dances were held in the main convention room of the hotel each evening of the convention.

Much of the credit for the success of the convention was due to the Atlantic City Electric Company, which was exceedingly liberal in the loaning of personnel service and general assistance in the handling of the convention details.

The first general session of the convention began at 10 a. m. Tuesday, June 5, with President Cortelyou delivering the opening address. Stating that the recent past has been a time of unusual need for taking counsel together and for making

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New Trustees of the Institute elected at the Convention

information promptly available to the industry, and that the Institute was realizing its objects in these respects, Mr. Cortelyou pointed out that it is clear that these needs, together with the exerting of united effort by the industry, will be just as important in the future. He then dwelt upon the work of the several committees, and other activities of the Institute, outlining what had been accomplished and what is expected to be done in the future. The latter part of his paper was devoted to a discussion of the effects of the National Industrial Recovery Act on the public utilities, the heavy and discriminatory tax burden borne by them, the financial and security situation, regulation and other matters of major policy.

In his report on finances, Mr. Edward Reynolds, Jr., Treasurer, said that expenses of the Institute had been kept well within the budget established. In a brief talk, Mr. Bernard F. Weadock, Vice-president and Managing Director, referred to the work being done at the general office, its equipment for service to the industry, and of the desire of his staff to be of maximum usefulness to members.

The next speaker, Hon. John J. Jackson, general counsel for Westinghouse Electric & Manufacturing Company, told the audience that the rising tide of State and Federal levies was but the manifestation of the "creature-state" becoming dominant over the "creator-citizenry." Mr. Jackson, with tangible evidence, showed where and why the governmental revenues so derived are expended and pleaded for action by industry and public alike to halt the vast movement. It was his contention that "Laws follow, do not precede, public opinion," and that therefore public opinion must be aroused if a reformation of the present trend is to ensue.

The first announcement of plans for a national running water activity was made at this session by Mr. P. H. Powers. This activity, which will be sponsored by the Electric Water Systems Council, a group composed of representatives of the power industry, the National Committee on the Relation of Electricity to Agriculture and of the pump manufacturers, has as its immediate objective the promotion of electric water systems for domestic use in rural areas. Despite the fact that running water and bath tubs are commonly accepted as universal in this country, surveys have indicated over a million prospects for this type of service, representing both the farming and non-farming rural customers.

It is expected that the promotion of water pumping systems in rural communities will induce parallel development of other applications such as small scale irrigation, water heating and the more general use of electricity on farms. The Council anticipates that through cooperative efforts on the part of dealers, manufacturers, jobbers and utilities, 125,000 electric water system units will be sold in the 15 months' period during which the activity will be conducted.

The electric light and power industry has before it a period of growth and technological development unparalleled by anything in its past history, Mr. Philip Sporn, Vice-president, American Gas and Electric Company, told the convention. The present depression has resulted in no let-up in the march of technology. At no time, he said, has there been as much research carried out in the scientific and technological laboratories of the world as during the past three years. In discussing the future of technical

(Continued on page 224)

J. G. HOLTZCLAW

Newly-elected Vice-president of the Institute

MR. McCARTER ON ACCEPTING THE PRESIDENCY OF THE INSTITUTE

Third General Session of the Second Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 6, 1934

I CAN only reiterate what I said to the Board of Trustees this afternoon when they wished this job on me. I esteem the compliment involved very much, that I should be thought to be the person to take command of this ship in the strenuous times through which we are passing. The other side of the picture is that at my time of life I am not looking for additional burdens and I had no conception of this suggestion which has now fructified into result, until twenty-four hours before it happened. Never yet have I refused to accept a call to duty, and when the hosts of the enemy are pressing down upon this industry in various unfair ways, if it is thought that I can contribute anything to meeting these attacks, I will be found standing there and not turning my back to run.

The most that I can ask for is that at the end of my term, those interested in this industry and in this Institute may feel some measure of the same regard for me that one and all of us have for the splendid work that Mr. Cortelyou has done while president of the Institute.

I realize that I can not make a success of it without the cooperation not only of the Board of Trustees but of all the members of this Institute. I pledge the best that is in me to this effort consistent with my other responsibilities, which unhappily are many, and I am going to count upon the cooperation of which I have spoken.

THE INSTITUTE'S NEW PRESIDENT

Thomas Nesbitt McCarter, president of Public Service Corporation of New Jersey and its constituent companies, and newly elected president of the Edison Electric Institute, is the youngest of six children of Thomas N. and Mary Louise Haggerty McCarter. He was born in Newark, N. J., Oct. 20, 1867. He received his early education at the Newark Academy, was prepared for college at Doctor Pingry's school at Elizabeth, N. J., and graduated from Princeton in the class of 1888 and later attended Columbia University Law School.

In 1891 he became a member of the law firm of McCarter, Williamson & McCarter, of which his father was senior partner, and his brother a member, and later practiced alone. Governor John W. Griggs of New Jersey, in 1896, appointed him Judge of the First District Court in the City of Newark. In 1899 Mr. McCarter resigned from the bench, and in the fall of that year was elected to the State Senate from Essex County. He served as leader of the majority in the Senate and in 1901 was made chairman of the Republican State Executive Committee. In April, 1902, he was appointed Attorney General of the State by Governor Franklin Murphy.

Mr. McCarter was general counsel of the Fidelity Trust Company of Newark, N. J., now the Fidelity Union Trust Company, to which position he was appointed in January, 1902. He resigned this and his post as Attorney General to accept the presidency of Public Service Corporation of New Jersey when the latter was formed in 1903, as the result of a survey and plan formulated by a committee of which he was chairman. Mr. McCarter served as president of the American Electric Railway Association for the year 1911-1912, and was chairman, for the period of the war, of that organization's war board. He is a member of the advisory council of the American Transit Association, and a member of the board of trustees of the Edison Electric Institute.

During 1933 Mr. McCarter was appointed by the Governor of New Jersey to three important State commissions, the Alcoholic Beverage Commission of New Jersey, the New Jersey School Survey Commission and the Local Government Plan Commission of New Jersey. He was made chairman of each of these commissions, which were organized to make recommendations for solving pressing problems affecting the welfare of the people of New Jersey.

Mr. McCarter is a resident of Rumson, N. J. On Feb. 9, 1897, he married Madeleine George Barker of Baltimore. Mr. and Mrs. McCarter have four children, Mrs. Nelson Doubleday, Thomas Nesbitt McCarter, Jr, Uzal Haggerty McCarter and Mrs. Carlos Dexter Kelly.

Among the clubs of which he is a member are Princeton, Links, Turf and Field, Recess and New York Yacht of New York, Essex of Newark, Metropolitan of Washington, Rumson Country Club, Seaview Golf, Absecon, N. J., Nassau and Ivy of Princeton, and Boco Baton of Florida.

He is director of the following companies:

Public Service Corporation of New Jersey and subsidiary companies, Fidelity Union Trust Company of Newark, Chase National Bank of New York, United Gas Improvement Company, the United Corporation, Philadelphia Electric and subsidiary companies. He is also chairman of the board of directors of Fidelity Union Trust Company.

WE SHALL GO FORWARD

By GEORGE B. CORTELYOU
President, Edison Electric Institute

The president's address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 5th, 1934

The year that has passed since the Edison Electric Institute held its first annual convention in Chicago will be long remembered in business history. It has been a year marked by sharp increase in demands upon business enterprise. Employers of labor and managers of property are expected to meet much heavier requirements than ever before, requirements that will tax their resources to the utmost, if not, indeed, overtax them. It has been a year also of increasing competition. Business, hard pressed, has intensified its efforts to survive. From many quarters competition, real and severe, presses upon the business of the electric light and power companies.

This has been a time of unusual need for taking counsel together and for making information promptly available to the industry. It has been a year of realizing the objects of this Institute, which are the advancement of the art of producing, transmitting and distributing electricity, the making available of information to the industry and the aiding of operating companies to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, with due regard to the interests of consumer, investor and employee. The task of dealing with the industry questions of the year has seemed hard enough, and had there not been long established and widespread acquaintanceships fostered by years of association of its leaders throughout the country, and had there not been available a well established organization to provide a ready means for exchanging information and arriving at workable arrangements, it would have been extremely difficult for the industry to meet the demands made upon it. So far as we are able to read the future, it is clear that we shall have further need of taking counsel one with another, of availing ourselves of the advantage of interchanging information and of exerting united effort.

I am pleased to report that the committees of the Institute during their first year of operation have taken hold of their tasks in a most gratifying manner. These committees direct their efforts toward tangible and practical considerations. Their work is not abstruse or academic or of remote application, but results in understandings and agreements that have a definite bearing on the conduct of our business and produce benefits of real value to the operating companies.

The Operating Committee has held meetings from time to time as seemed desirable. It has been the purpose of the committee in all its deliberations to direct the efforts of the Institute toward meeting the needs of the operating companies. In the interest of economy, it was, of course, necessary to keep expenditures at a minimum. The Committee has therefore exercised care to assure itself that the work which would be of greatest value should be undertaken first.

The Prize Awards Committee, under the chairmanship of Mr. Frank W. Smith, president, The New York Edison Company, has administered the following awards: The Charles A. Coffin Award to the operating company making a distinguished contribution to the development of electric light and power, the George A. Hughes Award to the company showing the greatest contribution to the development of the domestic electric cookery load, and the Thomas W. Martin Award to the company showing the greatest contribution to the advancement of rural electrification. It has also administered the Byllesby, Lindemann, McGraw and Forbes Prizes for the best individual papers on accounting, domestic electric cookery, engineering and public relations. The Board of Trustees, upon recommendation of the Operating Committee, during the year authorized the establishment of an Edison Electric Institute Medal to be administered by the Prize Awards Committee and to be awarded to employees of member companies for successful application of the prone pressure method of resuscitation from electric shock. A medal has been designed, judges have been appointed and procedure has been set up for making this award. At the Wednesday evening session the Chairman of the Prize Awards Committee will present the 1934 awards. At this session also it is planned to make the first presentations of the new Edison Electric Institute Medal.

The operating companies for many years have received definite and substantial benefits from the deliberations and negotiations of the leading insurance experts of the industry. During the past year the Insurance Committee of the Institute, under the chairmanship of Mr. Granville H. Bourne, has placed itself in a position to render similarly valuable service to the members. The Rate Research Committee, under the chairmanship of Mr. Frank A. Newton, supervises the publication of the Edison Electric Institute Rate Book and the dissemination of rate information to member companies. Competitive conditions at the present time and the public agitation concerning rates make the service rendered by this committee of particular value to operating companies.

The Statistical Committee, under the chairmanship of Vice-President William J. Hagenah, supervises the preparation of questionnaires and the compilation and presentation of the statistical information collected for the industry. This is one of the most important functions of the Institute and of great value to the membership. During the past year the question of statistics was particularly important because of the necessity, in preparing and presenting a Code of Fair Competition for the Industry, of collecting and compiling a large amount of special statistical information relating to employment conditions. The services rendered by the Statistical Committee in this work were invaluable.

The work of the accounting, engineering and sales committees covers the field of operations of the largest departments in the operating companies. It is the hope of every industry to continue to grow; for that is the way to maintain economic health. Further progress depends most upon improvements and developments in the work of these large departments. When new and heavier demands are laid upon business, which threaten to impede or stop further growth, there is all the more need for the introduction of improved practices, better methods, greater use of facilities

ONE of the greatest economists of the past once said: "No nation ever became great by quitting work."

Be that as it may, no association, representing a great industry, ever fully justifies its existence that does not work unceasingly to contribute to the industry's stability and progress, that it may realize the highest ideals of service and thereby gain and retain the confidence of its public.

May this continue to be the aim and the purpose of the Edison Electric Institute. —*President Cortelyou, in adjourning the Convention.*

I would be heartless if I did not, on behalf of myself and the general office staff, express our appreciation and our love for Mr. Cortelyou in his administration of the Institute since its inception. No detail has ever been too trvial for his attention. The bigger matters, he has decided instantly and wisely. His patience with us has been magnificent. We have consulted him freely, and his advice has always been sound, sincere, thorough and wise. Without the benefit of his wisdom, his knowledge, his understanding, his sincerity and his friendliness, the last two years might have been a different story.

Mr. Cortelyou, the credit for the progress of the Institute is due to you. May your career continue to ascend always, and our love goes with you.—*Bernard F. Weadock, at the closing session of the Convention.*

through increased sales of electricity per unit of investment; for finding ways to reduce investment costs and to obtain still lower operating costs in order to offset the added burdens. In some businesses, price increases may offset these heavier demands, but the short range view of public utility rates offers less promise of relief in this direction. The general situation in the electric light and power industry is such that organization which will facilitate and expedite improvements in the art of generating, distributing and utilizing electricity is of outstanding importance at this time.

The Sales Committee, under the chairmanship of Mr. George E. Whitwell, has carried on promotional work that has contributed appreciably to the sales of kilowatt-hours during the past year by the operating companies. The success of the Better Light-Better Sight Program was outstanding. This program has now been extended and will continue through the coming year to be an important element in promoting the sale of electricity. You will hear more of this plan at the session tomorrow morning. Other important contributions of this committee will no doubt be reported by its chairman tomorrow. Of value equal to that of furnishing leadership for the various sales programs has been the stimulation from the committee's meetings to the men in the sales organization of the companies. Stimulation to continued or to better effort is particularly important in the field of salesmanship.

The Electric Refrigeration Bureau, under the chairmanship of Mr. James E. Davidson, a cooperative enterprise between the electric light and power industry and electrical manufacturers, participated in by all branches of the industry, has to its credit the remarkable fact that during the past year, the third year of its existence, there were over a million domestic electric refrigerators added to the lines of electric light and power companies. The managers of operating companies can readily appreciate the value of the revenue from the operation of these added refrigerators in helping to maintain the income of their companies.

Valuable service to the entire electric industry was also rendered by the Electric Cookery Council, a cooperative undertaking between the Edison Electric Institute and the National Electrical Manufacturers Association, under the chairmanship of Mr. Preston S. Arkwright, Georgia Power Company.

Of basic importance, also, is the reduction of costs and improvements in carrying on the business, and the work of the Institute committees which foster and facilitate such results is of primary value to the members. The work of the Accounting Committee under Mr. J. H. Lobban of the Detroit Edison Company, of the Power Generation Committee under Mr. Alex D. Bailey, Commonwealth Edison Company, of the Electrical Equipment Committee under Mr. J. Allen Johnson, Buffalo, Niagara and Eastern Power Corporation, and of the Transmission and Distribution Committee under Mr. Mark Eldredge, Memphis Power and Light Company, has been directed toward enabling the business to carry its heavier burdens and continue to make money.

A group meeting of the three engineering committees held in Cleveland and a Sales Conference held in Chicago in March were very profitable and well attended. The important role which these committees play in promoting the business of the electric light and power companies was again demonstrated by the character of these meetings.

In the field of joint negotiations with other national organizations, representatives of the Institute have conferred with representatives of the American Standards Association, the National Board of Fire Underwriters, the National Electrical Manufacturers Association and other national bodies in matters pertaining to specifications, standards and codes, to insure safe construction and operation of power supply facilities and at the same time to reduce the costs of service. The Institute has carried on important joint relations with the Bell Telephone System, the Western Union Telegraph Company and the American Railway Association in the coordination of plant and facilities. I am pleased to report that the joint committee organization has been simplified and that these valuable contacts for insuring good neighborly relations with other wire-using industries have been carefully preserved.

The Codes and Standards Subcommittee of the Operating Committee, under the chairmanship of Vice-president Arthur H. Kehoe, has guided the policy of our representatives in the joint negotiations with these other national organizations.

A criticism that has been aimed at the present committee organization of the Edison Electric Institute is that the reduced size of the committees has limited participation by operating company men engaged in important work who would like to profit by the opportunities which come through association with men working on like problems in other companies. Careful consideration is now being given to expansion in the size of certain of the committees. The value of this committee work is fully appreciated, but at the same time the necessity for keeping the expense of such work within reasonable limits is clearly apprehended. The Operating Committee will endeavor to strike a proper balance between the two considerations.

The staff organization of the Edison Electric Institute, comprising 47 persons, devotes itself to aiding the operations of the several committees, to getting out the publications which the Operating Committee has approved, and to collecting and supplying information of particular value to operating companies as indicated by the nature of the requests for information received from the members. To a very considerable degree the value that members get out of this organization depends upon the use they make of it. The staff organization does not attempt to reach out to undertake work which might be of value to members but for which no real demand has made itself manifest. It takes its cue as to what to undertake from the requests for information or from the suggestions of those within the industry who take the trouble to make known their wants.

The outstanding development of the past year affecting the industry was the putting into operation of the National Industrial Recovery Act. Except in the matter of construction forces, the electric light and power industry had already met the problem of keeping its personnel employed to a very considerable extent through part-time employment and shortening of hours, so that aside from construction personnel, the total number of employees in June, 1933, was not very far from the pre-depression level.

Although the justification for a code of fair competition in a regulated industry such as the electric light and power industry was not apparent, when the National Recovery Administration requested the Institute to cooperate with the Government in carrying out its recovery program, the Board of Trustees decided to prepare such a code. As a first step, when the President's Reemployment Agreement applicable to all employers was published, a Code Committee was appointed to negotiate a substituted President's Reemployment Agreement for this industry. Subsequently, upon further request from the

National Recovery Administration, the Code Committee, assisted by a Lawyers' Conference, drafted a Code for the Electric Light and Power Industry. Invitations were sent to all electric light and power companies in the United States to attend an industry conference in St. Louis, Mo., on Dec. 5, 1933, at which the drafted code was submitted for consideration and approved for presentation to the National Recovery Administration. This conference appointed an Industry Code Committee to carry on the further negotiations with the NRA. Since that time a public hearing and numerous conferences with the NRA staff have been held in the working out of a mutually acceptable code. The development of a code for an important service industry of a highly technical character operating under a great diversity of conditions and through units greatly differing in size, is necessarily a slow process. The industry and the Government could well afford to proceed carefully to develop a satisfactory basis of operations rather than to proceed more rapidly and then find it necessary for one reason or another to retrace their steps.

Compliance with the substituted President's Reemployment Agreement has added very substantially to the payroll expense of the industry. At the same time the Recovery Program has increased the cost of supplies, materials and equipment. The effect to date has been a marked increase in the operating expense of companies.

Further, the demands made upon the time of utility executives and their staffs by attendance upon hearings, conferences and meetings, preparation of financial and other statements for the use of official bodies, federal, state and municipal, filling out of elaborate questionnaires and furnishing reports called for in connection with surveys, investigations and inquiries of all kinds, have reached such proportions as to constitute a serious menace to the progress of the industry in its primary function of supplying electric service, and especially to the further development and improvement of the art. And it is an evil that is growing, not abating.

In former years, new technical developments and new business methods came along at a rate that surprised the world and kept the public in a constant state of expectation of new and impressive accomplishment. Of course, in the nature of things, as an industry grows older it cannot produce a revolutionary improvement every day; but it must advance or it begins to lose ground, if not actually at least comparatively with respect to other business, and the good will built up from past achievements quickly evaporates. So with all their present preoccupation, the higher officials of power companies must somehow find time to devote to these practical and pressing problems; and it is incumbent upon all public bodies holding official relations to the industry to cooperate in meeting this urgent need.

Taxes paid by electric light and power companies for 1933 increased 15 per cent over the amount paid in the preceding year. They rose from 12 cents on the dollar of consumer revenue in 1932 to 13.5 cents on the dollar for 1933. The amount of taxes for this present year will constitute a still higher percentage of gross revenue than was the case in 1933, because some of the taxes added in 1933 did not become effective until the middle or latter part of the year. Although sales of electricity in 1934 have grown and it is thought that an increase for the entire year of 8 to 10 per cent may reasonably be expected over the kilowatt-hour sales for the previous year, the 1934 increase in taxes and other expenses will take a large share of any increase in revenue.

To the utilities, whose rates cannot readily be advanced to meet increased expenses, taxes may be and in many instances are a crushing burden. Taxes and rates cannot go in opposite directions—the one up and the other down—indefinitely. The only hope of justifiable rate reductions lies in the development of new and enlarged uses for electricity, but taxes are now so heavy as to act as a grave deterrent to increased use if they do not actually cut down the amount of use. A reassuring view of the future of the electric utilities is hardly possible that does not envisage an easing of the tax burden, certainly to the extent that it is discriminatory.

One of the contributions of the electric utilities to the return of prosperity has been the reduction in the price of industrial power. This has been reduced to the lowest point since the war year of 1917. At the present time the average price for this class of power is 12 per cent below that of last year, 6 per cent below that for 1929 and 13 per cent below the average price for 1926.

By the end of 1934 it is the official expectation that the price of practically all retail commodities will have attained the 1926 level and many of them will have surpassed it. On the other hand, the average price of domestic electric service will be about 23 per cent below the 1926 price and 38 per cent below the pre-war price of 1913.

In these simple but significant facts we have a conclusive refutation of the charge of generally excessive rates—a charge that is not made by consumers as a class, but by those who would use the consumer merely as a stalking-horse. Rates and service have very little to do with the present agitation against the utilities. Rates are lower and service better than at any previous time in our history. There is nothing the consumer buys for which he pays so little and receives so much, and he is continually receiving more and paying less, because rates have been declining steadily over a period of years, including even the boom years 1927-29. How many industries can point to such a record? No large or representative body of consumers is complaining of high rates, as one might suppose who listened to the outpourings of the radicals and of politicians of a certain type, laboring to create the impression that what is holding back prosperity is high rates for electricity. Ostensibly, to enlist consumer support, they demand lower rates; actually they seek the socialization of the industry. The primary object of many of them is not the production of power but the production of votes through subsidies from the public treasury. This is their real purpose, which should be brought out into the open where the people may consider it on its merits uncomplicated by irrelevant issues.

The amount of construction in the electric light and power industry in 1933 fell to $120,000,000, the lowest level since pre-war years. During 1933 new financing by the industry amounted to barely $10,000,000. Practically all of this financing occurred in the month of January of that year. The total for 1933 compares with a yearly average of $650,000,000 in the ten-year period from 1922 to 1932.

An important factor in the radical decline of new construction, aside from the passage of the Securities Act and other legislation affecting the sale of securities, was the fact that there has existed during the past year excess generating capacity over and above usual reserves, amounting approximately to 25 per cent and aggregating about 7,000,000 kilowatts. The plans of the Government which provide in aggregate for the development of power plants calculated to produce annually an amount of elec-

tricity equal to two-thirds of the total central station load that the United States, the most highly electrified country in the world, has been able to develop over a period of 50 years of rapid growth, have been another influence in slowing down the program of new construction of the electric utilities.

Electric light and power companies as a group have been the largest contributors in this country to the market for durable goods, without which complete restoration of prosperity is impossible. During the ten year period from 1922 to 1932 the electric light and power industry spent $7,500,000,000 for expansion and extensions. This is more than was spent by the railroads and was greater than all of the expenditures for roads, highways and canals. As late as 1930 the electric light and power industry spent for construction purposes the sum of $919,000,000. This outlay included an average payroll distributed throughout the country of nearly $40,000,000 per month, and was two and a half times the monthly rate of expenditure by the Federal Government on Federal projects financed by PWA funds as reported in the March, 1934, issue of Monthly Labor Review, published by the U. S. Department of Labor. Even during the year 1933, with the demand for extensions at a low ebb, the electric light and power industry spent more money for new construction than the Federal Government dispensed for loans and grants to municipalities and expended on the Boulder Canyon and TVA projects combined.

It is encouraging to be able to report that domestic electric consumers are reopening their homes and that they are buying refrigerators and other electrical appliances on a larger scale than last year. The number of domestic consumers reached its peak of 20,218,000 customers in September, 1931, and its low point of 19,699,000 in May, 1933, a loss of 519,000 customers. From this low point approximately 80 per cent of the domestic customers have been regained. The peak number of 3,750,000 small commercial customers was reached in January, 1932, and the low point in this class of customers was reached about a year later in February, 1933; the number lost amounting to 100,000 customers, about one-third of which have been picked up again. The tide has recently turned once more, however, and this class of customers is now decreasing.

In 1929 industrial power sales for the entire industry amounted to 44,300,000,000 kilowatt-hours. In 1932, the sales to this class of customers were 31,186,000,000 kilowatt-hours, a decrease of 30 per cent. For the twelve months ending March, 1934, sales to industrial customers amounted to 35,462,000,000 kilowatt-hours, an increase of about 11½ per cent over 1932, but still 20 per cent below the sales in the peak year of 1929.

The industry has made a creditable showing with respect to those elements of its business over which its leaders could exercise control, such as the promotion of increased use of electricity, the lowering of costs, the improving of standards of service, and the extension of service to farms and smaller communities. Items such as taxes are not within its control. Handicaps, however, must not be allowed to block progress. It is apparent, in order that the effect of the added burdens may not strike with more serious force the investors in utility securities, that there must be still further efforts to reduce costs and to increase the sale of electricity. We cannot afford to slacken in our efforts to advance the electric art in all of its branches. The younger men, in particular, who show promise of being able to make definite contributions to this art, should be given every encouragement to apply their ingenuity along practical lines to improve on past performances. Continued technical advances are the best insurance an industry can have against the forces that tear down.

Utility securities are typically the savings of Americans of moderate means. Available information indicates that 10 per cent of our stockholders own but one share of stock. Three-fourths of our stockholders own ten shares or less. Two-thirds of all the stockholders are women. Through the investments of savings banks, insurance companies, educational institutions and similar agencies, the ownership of utility securities is widely diffused among a large percentage of the population of the country.

Municipal ownership of utilities, as it is popularly termed, has been a subject of much discussion during the past year. Federal loans and grants have been made available for the construction of such utilities. Elections on municipal ownership in the past twelve months have been held in a number of communities, including some of the larger cities. Some statistics are interesting in this connection. Beginning with the year 1882, there have been established in the United States altogether about 3,900 municipal plants. According to the report of the U. S. Bureau of the Census, at the end of 1932 there were 1,802 municipal plants, less than half of the number that had been established at one time or another. Only eight new municipal plants were established in 1933. This compares with 125 established in 1915, 113 in 1910 and 111 in 1900. Municipal plants in 1932 served a population of 7,200,000, and the electric light and power companies served 82,700,000, or 92 per cent of the total. The relative growth of the two systems over a fifty year period speaks eloquently for the performance of the privately operated companies.

It would be worse than foolish to ignore the fact that the losses sustained by many utility investors through special causes, on which it is not my province to comment at this time, have intensified the agitation against the utilities and have stimulated the advocates of government and municipal ownership to renewed efforts. But it should be noted that it is investors who have lost, not consumers. It is mainly the securities or stock-selling side of the organizations involved—not the property side—that is affected; and it is the property side that governs rates. This is a commonplace to us but it seems to be a sealed mystery to our critics. It is unreasonable, however, to expect the general public to discriminate closely in such matters, especially when officials holding high office, who ought to know better, fail to do so, and when moreover, the propaganda that is poured out in unprecedented volume represents such losses as falling upon consumers in the shape of swollen gas and electric bills.

As a matter of fact, the losses which investors have suffered through dishonest or profligate management, deplorable as they are, have not added a penny to the gas and electric bills of a single consumer. This is the central fact which emerges from the heat and smoke of controversy.

President Wilson is reported to have said: "I must cut deep, but I must cut carefully. I must cut out the things that are decayed and rotten, but I must leave every wholesome tissue absolutely untouched." This I think expresses a wise rule of conduct under all circumstances. It certainly represents the attitude which fairness demands of those who would pass judgment on the electric light and power industry, and especially on the part of those whose official status places them in a special relation to that industry. Having by virtue

of their positions a privileged access to the channels of publicity which mold public opinion they are under a corresponding obligation not to abuse their privilege to the prejudice and injury of that which is sound and wholesome in the industry.

Punish violators of the law, of course, whoever they are and wherever they may be found, whether among the utilities or anywhere else, but do not allow the resentment that is natural in such circumstances to be vented upon an entire industry, the overwhelming majority of whose elements have been honestly conducted.

Our industry has nothing to fear from comparison with any form of government operation, provided the standard of comparison is the same in both cases; provided the "yard-sticks" are of equal length. That is the point invariably ignored in the comparisons so fluently made, and much of the recent legislation permissive of municipal operation makes it more and more difficult to arrive at a common basis of comparison.

If not unreasonably handicapped by the burdens from which municipal plants are free, and others equally onerous, private industry will continue to demonstrate its superior ability to furnish electric service to the people of the United States.

In looking over the output of the anti-utility spokesmen, one is struck, also, by the absence of the commendatory note in connection with anything that the utilities have ever done. In the industry's record, past and present, they find nothing to commend and everything to condemn.

That the electric light and power industry, founded by Edison, has extended its facilities until it covers practically all sections of the country with a network of transmission lines, making its service available to home and industry on a scale unparalleled anywhere else; that its cost to the consumer has been constantly downward from the beginning, with the exception of two years immediately after the war; that most of the technical advances in the electric art are the product of American inventive genius; that the achievements of the industry have excited the admiration of the rest of the world and are generally admitted to be a prime factor in American industrial supremacy — these are facts that you would not suspect from anything they have said or written.

The trouble with them is, they prove too much; and proving too much is often more embarrassing that proving too little.

One does not know whether to be more amazed at their disregard of facts or at the low estimate they place upon the intelligence of the American people.

And now a word as to regulatory bodies.

For many years my position with regard to commission regulation has been well known. I have supported it on many occasions; but when proposals have been made that embodied grants of power that would exceed any proper authority that should be conferred upon such bodies, and that would be distinctly against the interests of utility properties, their investors and their employees, I have felt it my duty to voice an emphatic protest, along with that lodged by the investors themselves, the many fiduciary institutions, large and small, that also represent large bodies of investors, and, from the larger point of view, the public interest, that is best served by dispensing even-handed justice.

Theoretically regulation expresses the ideal relation between government and the utilities, and we of the electric light and power industry are in favor of thorough-going regulation; but in practice it threatens, under political pressure, to degenerate into an instrument of repression that will cancel its theoretical advantages. In certain jurisdictions we have witnessed its steady encroachment upon the domain of management, each step leading to another and still another. Following the time honored pattern of bureaucratic growth it seizes upon any and every excuse for enlargement of its powers. It is always able to point to some situation somewhere, however sporadic and exceptional the case may be, in justification of its demand for more authority. And this demand is supported if not initiated by the band of politico-social extremists who say that regulation has not gone far enough. It must be made more "rigid" they insist.

What regulation needs is not to be made more rigid but more flexible. It must be able to differentiate between what is minor and occasional and what is typical and general, and to deal with situations that are manifestly local and incidental in such a way as not to penalize the great body of the industry that lies outside the affected area. Above all, the successful regulatory system is one which, while affording full protection to every legitimate interest, is not pushed to such extremes as to stifle enterprise and deaden initiative. These must be preserved to utility management at all hazards if the industry is to serve the highest public good. If regulation is to be made more "rigid" at the sacrifice of these qualities, it is bought at too high a price.

This is a time when business—all business—should be encouraged to go ahead, when it should be helped, not hampered. You cannot promote recovery by impairing credit and destroying values. You cannot revive industry by killing initiative and hamstringing enterprise. The road to recovery lies through constructive, not destructive, measures. Regulation is most effective when it gives all parties embraced within its authority a square deal. It fails when it departs from that standard. While subjected to every reasonable regulation the utilities of the country should be permitted to develop along lines that are economically sound and therefore socially most beneficial.

I said last year at our Chicago convention, and now repeat in substance, that the various units of the electric industry should acquaint their customers and the public with the facts of their local situations. The Edison Electric Institute undertakes to present facts relating to the industry at large, for the information of all interested persons and governmental bodies. But each individual company should lay its own facts and figures before its local public that it may be fully advised as to the company's problems, facilities and service, and thus be in position to detect and reject the misrepresentations and falsifications that are circulated to its detriment. If the public is to form just judgments it must know the facts; and what it is the right of the public to know it is the duty of the utility to furnish.

The Institute, thoroughly organized for its work and with the experience already gained in its administration, is in a position to be of greatly increased usefulness to its membership and to the industry at large. Closer contacts must be established with its membership and with the personnel of the companies, and the value and reliability of its service must be made known to the public.

Under its constitution, public relations form no part of our program, but these relations cannot be left to take care of themselves. In some proper way, the industry must go to the country with its case, openly, fully and fairly presented. If such presentation influences public opinion it will be the influence of the

(Continued on page 212)

PRICE LEVELS AND RATES

By F. A. NEWTON

The Commonwealth & Southern Corporation, Chairman Rate Research Committee, Edison Electric Institute

Address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 6th, 1934

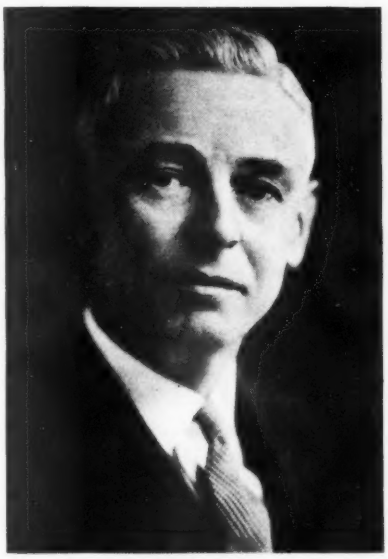
The electric utility industry is 52 years old. What has been the relation between the fluctuation in commodity prices and electric rates, especially for domestic consumption, throughout this period? What are the lessons to be derived for a sound public policy with respect to rates, from this half-century of experience?

Do the facts with respect to the fluctuations of rates and prices support the contention made during the last two years that rates should come down because commodity prices have fallen? What confronts the industry by way of price fluctuation for the immediate future? These are the questions which a complete discussion of rates and prices should attempt to answer. If one had time to write a book, it would be possible to discuss these topics fully. Within the limits of this paper two things only can be done. The scope of the subject and its problems can be sketched, and the outstanding facts with respect to rates and prices and their effect upon the fortunes of the industry can be pushed through the door and allowed to speak for themselves. They are eloquent enough as they stand.

One of the most important problems which the management of industry must continually meet and solve is the formulation of a sound policy to meet the difficulties raised by fluctuating commodity price levels. The electric utility industry must conduct its business within the framework set by the price system; and it must continually adjust itself to changes within that system.

There is much talk about the desirability of stable price levels, but the world has seen little stability in the 50 years since this industry had its beginning. During that half century we have not navigated upon a placid lake, where one had only to take soundings—make accurate charts, and then pursue a safe course. Instead, we have been navigating upon a turbulent stream with constantly shifting currents and at times with floods.

During the last few years, the industry has been faced with the necessity of meeting a rapidly shifting and changing situation. In the early months of 1932 electric rates for domestic consumers were attacked, as were many other utility rates, on the ground that they had not fallen as much as commodity prices. It was argued that rates should move with the general price level, which had already fallen 30 per cent at that time and was still sinking. Rates had declined less than prices. The sales of electricity to domestic consumers were actually running 20 per cent ahead of 1929, however. This proved clearly that the rates were still low enough to attract new business. As a matter of fact, the volume of domestic sales reached its peak in 1932 and held that peak in 1933. In 1931 the gross revenue from sales to all consumers, including commercial and industrial, was actually higher than it had been two years earlier. The increased revenue from domestic sales more than offset the decline in the commercial and industrial sales. The electric utility industry unfortunately and erroneously was frequently referred to as depression proof.



MR. NEWTON

Under these conditions domestic rates became the target for people who were anxious to commend themselves to a public whose income had been shrinking rapidly for over two years. It was asserted that the prices of all things must be adjusted to a lower level; that this was a new economic situation, and that we were on our way to the price levels of the pre-war era. The prices of those distant years were presumed to be "normal," and a general readjustment was held to be necessary. In short, it was assumed as a fundamental principle that rates should follow commodity prices in their fluctuations.

Today that situation has changed radically in one respect at least. After March 4, 1933, the administration at Washington decided that the prices of 1932 and 1933 should not be accepted as the economic level of the future. A new program was announced. Its aim was the restoration of prices to the level which prevailed in 1926, and their stabilization upon that level, if possible. In pursuance of this new plan, Congress conferred upon the President almost unlimited powers to manipulate the monetary system and the credit structure, with a view to raising prices to the desired level. Never before has a President, either in peace or in war, been given such wide authority to accomplish any economic end.

Under the powers thus given him, the President issued a proclamation on Jan. 31, 1934, actually changing the weight of the gold dollar from 25.8 grains of gold, nine-tenths fine, to 15 5 21 grains. He observed that this was 59.06-plus per cent of its weight as fixed by Congress in 1900. It was provided that "such gold dollar, the weight of which so fixed shall be the standard unit of value and all forms of money issued or coined by the United States shall be maintained at a parity with this standard." Still more recently additional powers have been conferred upon the President by way of authorizing him to purchase silver and use that metal "in stabilizing the purchasing and debt-paying power of our money on a more equitable basis."

In view of all this legislation and action by the administration, there can be no doubt that the prophecies of the new low economic level of prices, which were so freely made a year or two ago, have no longer any validity. We are headed for higher price levels, and, indeed, for the restoration of those prices which prevailed in the years before 1929. Yet for the time being the industry is still confronted with an attack upon its rates for domestic use. They are under attack both by acts of regulatory bodies and by threat of competition from federal and municipal governments.

The efforts to raise commodity prices have resulted in an increase since the early months of last year of somewhat more than 20 per cent in wholesale prices. Agricultural commodities have actually risen 50 per cent. This general rise may be expected to continue until prices have once more attained to the level of 1929 at least. In 1926 they were a little higher than in 1929. You are faced with the prospect, then, of conducting the industry in the future under the price conditions which prevailed during those years.

On the side of electric rates to domestic consumers, there has been a decline from 6.33 cents per kwhr on the average in 1929 to 5.49 cents in 1933. For the current year (1934) domestic rates will be even lower. In fact, at the present moment domestic rates are fully 15 per cent below those of 1929. The effective rates are, however, even lower than this. For rates cannot be discussed intelligently without considering at the same time what has happened with respect to taxes. An increase in rates which is straightway offset by an increase in taxes is of no benefit to the industry. It would be making it a tax collector in disguise.

What has happened since 1929 is a good example of this. In that year the electric industry sold to domestic consumers 9,772,000,000 kwhr. For this it received revenue amounting to $618,798,800, or 6.33 cents per kwhr. In 1933 it furnished 11,960,000,000 kwhr to this class of consumers at an average of 5.49 cents, and received a total of $656,570,000[1]. In short, for the added 2,188,000,000 kwhr it received an additional revenue of $38,000,000.

During the same period the taxes levied upon the industry rose from $187,500,000 to $230,000,000, an increase of $42,500,000. This completely offset the entire gain in revenue from greater volume of domestic sales. The industry would have been just as well off, in fact a little better, if taxes had remained the same and the domestic rates had been reduced by the amount of the tax increase. The added taxes imposed amount to .35c. per kwhr sold to domestic users. It must be clear that the financial position of the industry would have been the same in 1933 if the rate had been 5.14 cents instead of 5.49 cents for domestic users; and if taxes had remained on the 1929 level.

For 1934 it is conservatively estimated that taxes will reach a figure of $270,000,000. This is $82,500,000 more than in 1929. If domestic sales reach 12,500,000,000 kwhr, this increase in taxes amounts to .66 of a cent per kwhr. If taxes had remained on their 1929 level and if the rates were reduced sufficiently to yield $82,500,000 less, the rate per kwhr for 1934 would be 4.75 cents for domestic users. The companies would be in the same financial position as they are now. They would receive smaller revenue and pay only the taxes which were levied upon them at the peak of prosperity in 1929. It is interesting to note that such a rate (4.75 per kwhr) would be 25 per cent lower than the 1929 domestic rate of 6.33 cents. The wholesale price level is today only 23 per cent below the level of 1929.

This increase of taxes during the last five years is limited almost solely to the electric utility industry. In the case of the railroads, taxes fell 37 per cent between 1929 and 1933. For the year 1934 the electric utility industry will actually pay a larger sum to the various governments in taxes than will the entire railroad industry. In the field of agriculture the tax on farm property has declined more than 30 per cent since 1929. As against these, this industry will pay taxes in 1934 which are 44 per cent higher than those of 1929.

That statesman who, on the signing of the recent bill providing for the investigation of electric rates throughout the United States, exclaimed impulsively that this legislation "will result in a reduction in the costs of light and power to the ultimate consumers of this country of not less than $50,000,000 a year to begin with," was behindhand in his investigation and researches. Had he been fully informed of the situation, he would have realized that the tax-gatherer had been there before him; and had garnered in over $40,000,000 for the public's benefit in 1933, and was actually busy collecting $80,000,000 for the current year in excess of 1929 taxes.

In this difficult situation, it may be helpful to review the history of domestic rates in the electrical industry. For this is not the first time that the industry has been confronted with the problem of fluctuating price levels. The electric utility industry had its practical beginnings in 1882, the year in which President Franklin D. Roosevelt was born. The half-century which stretches between that date and the present time has furnished an abundance of price fluctuation; and we may learn something by studying the experience of our industry during this period. Interesting is the fact that commodity prices generally stood then almost exactly where they are today. They had improved considerably after the depression which had lasted from 1873 to 1878. But within a year they entered upon a drastic decline which ran to 1896. There they touched the lowest level in the history of our nation. After that they rose steadily until the war broke out; then they skyrocketed to a peak in those hectic post-war days of 1929. At that point they were three and one-half times as high as they had been at the bottom in 1896; and more than twice as high as in 1882. The gyrations since then are still more or less fresh in your memories. Prices fell drastically in 1921; rose and remained fairly level from 1923 to 1929; then took a downward plunge to the spring of 1933. The rise of the last year has carried them back to a point where they stand practically at the level of 1882 and also of the pre-war period in this country. In the intervening period prices have fallen to the lowest point in our history and have risen to the highest.

To put these fluctuations in commonsense terms, a typical group of commodities at wholesale would have cost $108 in 1882[2]. These could have been bought for $86 in 1896. By 1913 they had risen to $102, and by the spring of 1920 they would have cost more than $240. In the early months of last year their price had dropped to $94, but today is again back to $108. These gyrations are so extreme as to furnish us an ample test of the necessary relation, if any such there be, between electric rates and commodity prices.

Electric rates for domestic consumption pursued no such wildly fluctuating course. Generally speaking, the facts

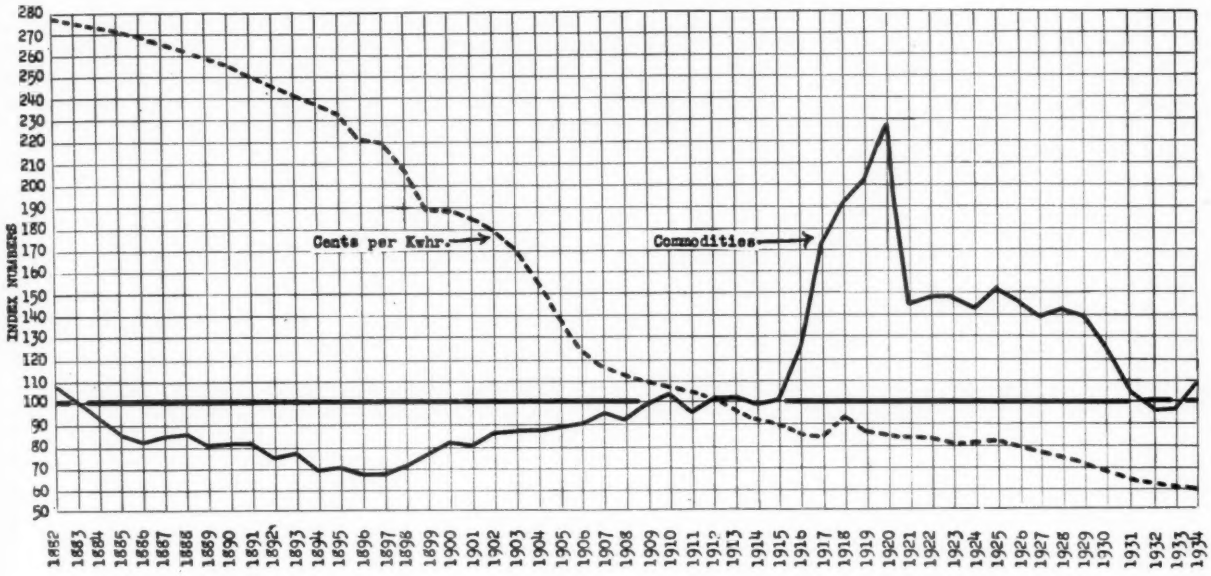
[1] Edison Electric Institute Statistical Bulletin No. 9—August, 1933, P. 3.

[2] Based on index numbers of wholesale prices in U. S. PP. 26 and 27 "Prices"—by Warren & Pearson.

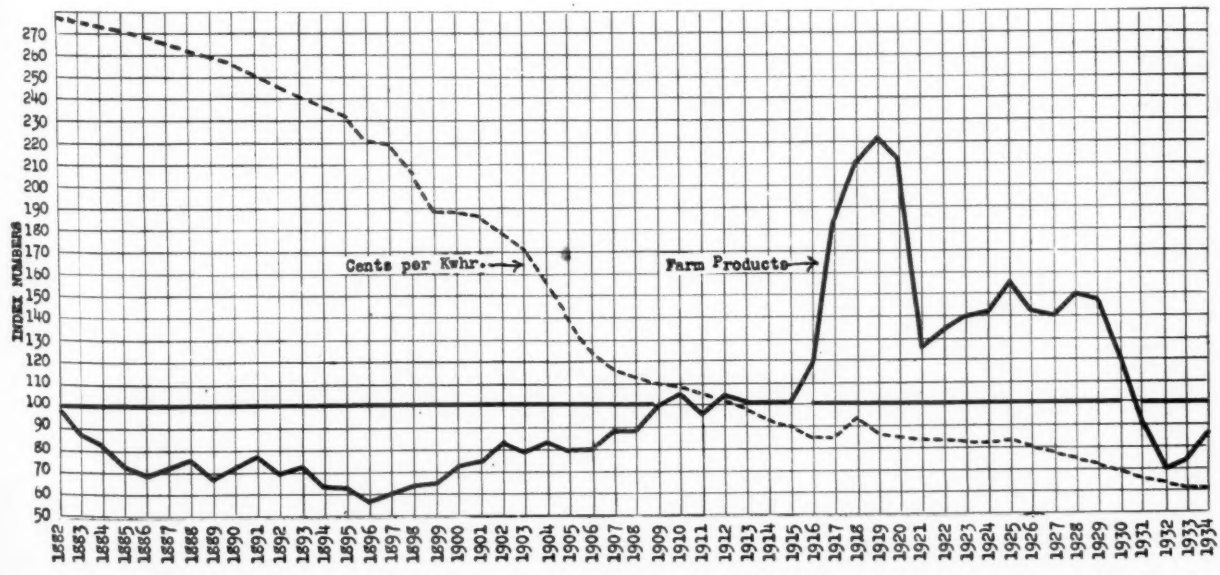
are familiar to this audience. The trend of electric rates has been steadily downward throughout the entire period. As near as we can ascertain from such records as are extant, the rates at the beginning were commonly 25 cents per kwhr. They fell gradually over the first 20 years until 1902 they stood at 16 cents. In that year the first census of electrical industries was taken for the United States. By this time the use of electricity was established in the industrial life of the nation and in the habits of the people. For in that year it had reached a point where it was able to meet the competition of its principal competitor, the gas industry. The latter was no newcomer in the field, struggling to approve itself to the consuming public. It was established in this country in 1806, and was, therefore, almost 100 years old by 1902. Yet, when the census data appeared, it showed that the total volume of sales of electricity approximated those of gas in the early years of this century.

Up to this point, the history of the electric industry was clearly one of experiment and development. The business in the first ten years of its life was largely lighting. The succession of new improvements was so rapid as to make the business a precarious one, and the losses were frequent and large. But the convenience of electricity was so great, and the improvements in methods of generation, of lighting and of utilization for power, went forward so rapidly during the second decade of the industry's life that it got thoroughly on its feet by the turn of the century.

From this time on the use of elec-



Comparison of Changes in Commodity Prices and the Average Cost of Electricity for Household Use, 1882-1934, Inc.
1910-1914 = 100



Comparison of Changes in Price of Farm Products and the Average Cost of Electricity for Household Use, 1882-1934, Inc.
1910-1914 = 100

tricity developed rapidly. The output in 1902 had amounted to 2,500,000,000 kwhr. It doubled during the next five years; and then doubled again in another five. By 1917, when the fourth census of electrical industries was taken, the output had multiplied by ten; and the 2,500,000,000 kwhr had become 25,000,000,000. Commodity prices were rising throughout this entire period. With the push that the war had given them, they were twice as high in 1917 as they had been in 1902.

Despite this increase in the cost of all things which the electrical industries bought, the trend of electric rates was rapidly downward. In 1917 they were less than half as high for domestic users. For they had fallen from the 16 cents in 1902, which enabled them to compete with gas, to 7.5 cents in the intervening 15 years[3]. Since 1917 they have never risen more than 10 per cent above the rates of that year. In only two years were they higher; and by 1920 the average rate for domestic use had returned to its earlier levels, despite the fact that wholesale prices reached their peak.

The years 1910 to 1914—immediately preceding the war—have commonly been used in the discussion of the parity which should be established between agriculture and other prices. With the prices of the years 1910 to 1914 as the base, the movements of commodity prices and domestic electric rates have been compared from 1882 to 1934. Today domestic electric rates stand 32 per cent below the level of 1910-1914, the prewar years. Commodity prices are higher than at that time.

If parity of prices on the basis of the five years 1910 to 1914 were the end to be accomplished, then the electric utility has already reached that end. This is true even as against agricultural products, which form the very storm center of the discussion over commodity prices. They are today 15 per cent below those of the base years, while domestic rates are 32 per cent lower.

The facts with respect to prices and domestic rates at once dispose of any historical basis for the assertion that there is any necessary correspondence of movement between them. There was no such correspondence even during the period of war prices.

[3] Edison Electric Institute Statistical Bulletin No. 9, August, 1933, p. 6.

INDEX NUMBERS OF AVERAGE COST OF ELECTRICITY FOR HOUSEHOLD USE—PRICE OF FARM PRODUCTS—ALL COMMODITY PRICES

1910-1914 = 100

Year	(1) Cents Per Kwhr	(2) Cost of Farm Products	(2) Cost of All Commodities	Year	(1) Cents Per Kwhr	(2) Cost of Farm Products	(2) Cost of All Commodities
1867	...	...	162	1901	185	74	81
1868	...	...	158	1902	179	82	86
1869	..	...	151	1903	171	78	87
1870	...	...	135	1904	156	82	87
1871	...	...	130	1905	138	79	88
1872	...	...	136	1906	124	80	90
1873	...	...	133	1907	116	87	95
1874	..	..	126	1908	112	87	92
1875	...		118	1909	109	98	99
1876	...	...	110	1910	107	104	103
1877	.	...	106	1911	104	94	95
1878	...	...	91	1912	101	102	101
1879	...	...	90	1913	96	100	102
1880	...	...	100	1914	92	100	99
1881	..	...	103	1915	89	100	101
1882	277	99	108	1916	84	118	125
1883	...	87	101	1917	83	181	172
1884	.	82	93	1918	92	208	191
1885	271	72	85	1919	85	221	202
1886	..	68	82	1920	83	211	226
1887	...	71	85	1921	82	124	143
1888		75	86	1922	82	132	147
1889		67	81	1923	80	138	147
1890	255	71	82	1924	80	140	143
1891		76	82	1925	81	154	151
1892	...	69	76	1926	78	141	146
1893		72	78	1927	76	139	139
1894		63	70	1928	73	149	141
1895	233	62	71	1929	70	147	139
1896	221	56	68	1930	67	124	126
1897	219	60	68	1931	64	91	107
1898	207	63	71	1932	62	68	95
1899	189	64	77	1933	61 (a)	72	96
1900	188	71	82	1934	60 (b)	84 (b)	107 (b)

(a) November, 1933.
(b) April, 1934.
(1) Computations based on data in Statistical Bulletin No. 9, August, 1933, p. 6, of the Edison Electric Institute.
(2) Prices by Warren, George F., and Pearson, Frank A., pp. 26 and 27.

The most puzzling problem that is raised by a contemplation of these facts is how this industry was able to carry on through the great upheaval of prices which occurred between 1915 and 1920. How did it manage to weather this period of rising expenses which were brought on by the general uprush of costs? For the electric utility industry alone was receiving lower rates in 1920 than it had in any previous year. All other industries, regulated as well as non-regulated, had marked increases in the prices which they received for their product, and so in their revenues. That this must have been so for the unregulated industries is obvious. For the very prices which make up these indexes for commodities were those which these industries received for their products when they sold them.

Agriculture is a good example of what occurred. The growth of agricultural population practically ceased after 1900. It was only 7 per cent larger in 1920 than at the beginning of the century, and by 1930 it was back to the level of 1900. But the value of its products rose from $3,807,000,000 in 1902[4] to $16,935,000,000 in 1915[5]. This includes the value of all products except those which are used up on the farm in creating other products—for example, the corn fed to hogs. The total output of farms measured in physical units (tons, bushels, gallons and dozens) had increased less than 40 per cent. The reason for this disproportionate growth of revenue, as compared with output, is to be found in the fact that the prices of farm products had gone up from 82 in 1902 to an average of 221 in 1919. In fact, they rose more rapidly than non-agricultural commodities. As a result of this increase in income, with only a very small growth in the number of farms or in the number of persons engaged in agriculture, there was a phenomenal rise in land values. The value of all farm land, exclusive of buildings, stood at $13,000,000,000 in 1900; and by 1920 had risen to $54,000,000,000. The acreage was only slightly larger. Naturally, the subsequent decline in farm products brought widespread distress, largely because of the fact that much of this land had changed hands at these peak prices and a staggering mortgage debt had been incurred in the process.

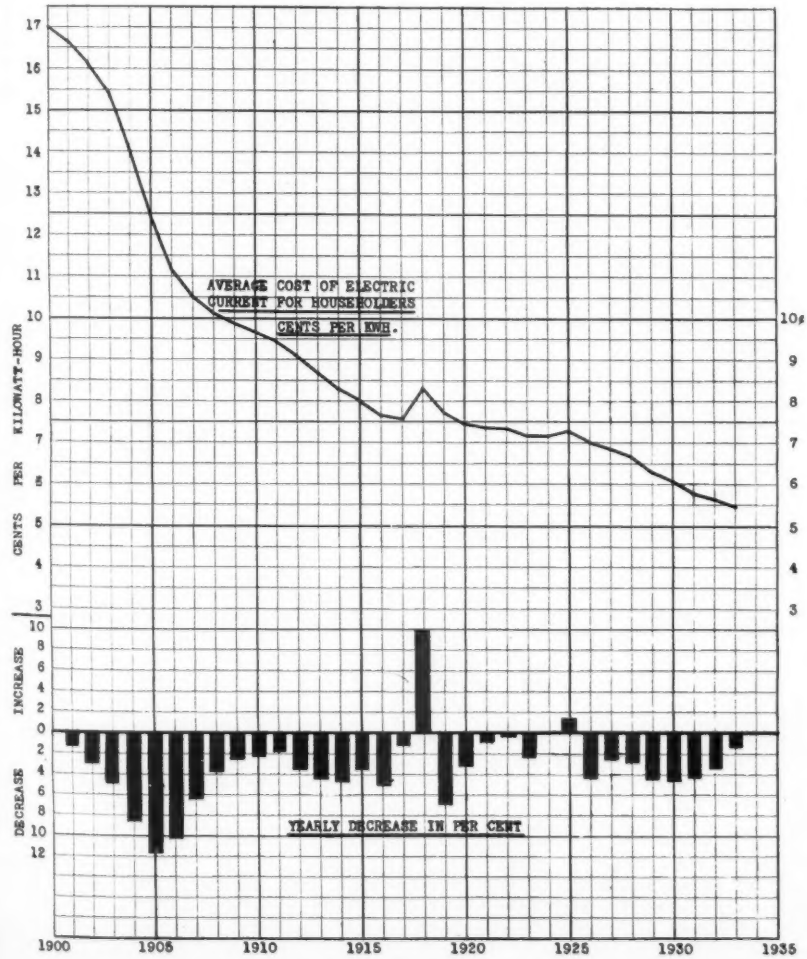
In the field of mining and manufacturing the rise in prices brought with it the well-remembered phenomenon of war profits, and the widespread discussion and agitation over profiteering.

In the field of the regulated industries, that is, the public utilities, the street railways raised their rates per passenger carried 35 per cent, to offset the increase in costs and prices. Telegraph rates were increased 20 per cent in the spring of 1919 by the Postmaster-General of the United States, who at that time was in charge of the telegraph and telephone companies, which the Government had taken over for operation in the previous year. There were also numerous increases in telephone rates, varying from city to city and state to state.

The railroad industry furnishes the most interesting and illuminating comparison with the electric utility industry throughout this period. Its experience conforms more nearly to the general pattern of expenses and profits which would have been expected to result from the price revolutions which the war brought. The railroads of the United States attained their highest pre-war earnings in 1916. In that year their operations, after paying expenses, depreciation, and taxes, resulted in a net operating income of $1,040,000,000. During the next four years their rates were raised, until in 1920 freight rates were 49 per cent higher and passenger rates 34 per cent above those of 1916. This increase, coupled with the growth in traffic, added $2,500,000,000 to the gross operating revenues of the railroads. These rose from $3,597,000,000 in 1916 to $6,178,000,000 in 1920.

But the net railway operating income did not advance. It fell from $1,040,000,000 in 1916 to the insignificant sum of $17,000,000 in 1920. In short, their net earnings were wiped out, despite the great augmentation of their gross revenue. Nothing but the Government guarantee saved them from wholesale

[4] Consumers Yearbook — United States, 1929, p. 188.
[5] "Economic Trends in Agriculture," U. S. Dept. of Agriculture, July, 1933, p. 35.



Cost of Electric Current for Householders in United States, 1900-1933

bankruptcy. In 1921 rates rose still higher, and were 80 per cent above those of 1916 for freight and 50 per cent for passengers.

As against this experience, the electric utility industry managed to live on its own revenues. While it did not make a fair return upon its property during this period—it fell far short of that goal—it managed to struggle through. A group of nine important operating utility companies show earnings, even in 1920, of 4.3 per cent on their invested capital.

Why this difference between the railroads and the electric utilities? A large part of the answer is revealed by a comparison of their expense accounts. In the railroad industry the cost of labor absorbs 40 per cent, in normal times, of the gross operating revenue. In 1920 the amounts paid to labor had risen to 55 per cent of the gross revenue of the railroads. Despite the increase in freight rates, wage payments outran them by a good distance. These payments more nearly conform to the movements of commodity prices. The fuel and materials used in conducting railway operations ordinarily absorb about 25 per cent of the gross in normal times. In 1920 this had risen above 30 per cent. In ordinary times about two-thirds of all the revenue of the railroads goes to pay labor and the materials used in operation. Whenever prices and costs of living rise, this brings about a rapid expanse in operating expenses, which naturally results in a corresponding decrease in operating income. In the electric utility industry, on the other hand, the wages and salaries paid to labor are normally only about 20 per cent of the gross received from electric service. Nor do the fuel and other material costs absorb so large a part of the revenues. This is particularly true of hydroelectric plants.

The secret of the matter is that this industry does not create its product and render service so much with labor and material which it buys currently and utilizes. It renders its service more largely with plant. This gives its expenses a certain degree of immunity from sudden changes in prices and the cost of living. This is especially true if the company has surplus plant capacity at the beginning of a period of rising prices. In that case, it will make a relatively good showing despite the price advance. This is what happened in the years 1917 to 1920. The companies which found the pressure most severe were those which experienced a great expansion in the demand for electric energy, and which were, in consequence, compelled to add to their generating facilities.

But these same characteristics of the industry make it quite impossible to reduce rates when prices fall, and still maintain earnings which approach a fair return upon the value of the property. The cost of rendering electric service is largely determined by the plant investment, and that cost does not fall merely because the general price level declines.

These facts, which differentiate the electric utility industry from most others, have special bearing upon sound rate-making policy. The continuous decline in domestic electric rates throughout the history of the industry is very largely the result of improvement in the technique of generating, transmitting and distributing energy. If rates are to remain low, and if the service is to improve continuously, an abundant supply of capital must be available for expansion and improvement. The fair rate of return and the establishment of fair values are the crucial factors in electric utility rate-making. The cost of

COST OF CURRENT FOR HOUSEHOLDERS IN UNITED STATES, 1900-1933

YEAR	AVERAGE RECEIPTS PER KILOWATT-HOUR SOLD	YEARLY DECREASE	YEARLY DECREASE
	CENTS	CENTS PER KILOWATT-HOUR	PER CENT
1900	17.00	-	-
1901	16.70	0.30	1.77
1902	16.20	0.50	3.00
1903	15.40	0.80	4.93
1904	14.10	1.30	8.43
1905	12.45	1.65	11.70
1906	11.20	1.25	10.05
1907	10.50	0.70	6.26
1908	10.10	0.40	3.81
1909	9.84	0.26	2.58
1910	9.62	0.22	2.34
1911	9.43	0.19	1.98
1912	9.10	0.33	3.50
1913	8.70	0.40	4.38
1914	8.30	0.40	4.60
1915	8.00	0.30	3.61
1916	7.60	0.40	5.00
1917	7.52	0.08	1.05
1918	8.27	Inc.0.75	Inc.10.00
1919	7.70	0.57	6.90
1920	7.45	0.25	3.25
1921	7.39	0.06	0.81
1922	7.38	0.01	0.14
1923	7.20	0.18	2.44
1924	7.20	-	-
1925	7.30	Inc.0.10	Inc.1.39
1926	7.00	0.30	4.12
1927	6.82	0.18	2.57
1928	6.63	0.19	2.79
1929	6.33	0.30	4.53
1930	6.03	0.30	4.73
1931	5.78	0.25	4.14
1932	5.58	0.20	3.46
1933	5.49	0.09	1.61

Average yearly decrease 1901-1933, 3.70%. This average is based on percentage that the sum of the differences is of the sum of the prices.

Source: Edison Electric Institute Statistics.

C.E.I

labor and materials is of much less consequence here than it is in many other utilities. Given an adequate rate of return, which will enable the industry to command capital freely at all times, the industry can protect the public against the vicissitudes of rapidly rising prices. It did this in the years 1917 to 1920. It is significant that at this time, when various groups are clamoring for increased price levels, that the electric utility is not asking for higher rates. But it must, in justice to its management and to the investors who have made the cheap and efficient service of today possible, protest with all vigor against further decreases in rates at a time when all other prices are advancing.

The experience of the last four years has demonstrated one fact clearly. It is that the value of the electric service to domestic users was far above the rates which have prevailed in 1929 and remained above it throughout that period. One of the standards by which the fairness of rates has been tested ever since *Smyth vs. Ames* is embodied in the statement that the public is entitled to demand that no more be exacted from it than the services rendered are reasonably worth. The difficulty in applying this principle becomes apparent when the attempt is made to reduce the worth, or value of the service, to a definite statement in dollars and cents. The value of electric service to the consumer is, no doubt, higher in ordinary times of prosperity than the rate which he pays, else he would not buy the service. As one court said, the rate can never be higher than the value of the service, and can seldom equal that value. The test is whether the consumer would, under compulsion of necessity, pay a higher rate if the service were not to be had for less.

As a practical matter, we can never determine in ordinary times how much he would pay if he had to. The only way of discovering this by experimental test would be to raise the rate step by step until a point was reached where the consumption fell off and customers abandoned the service entirely. The fact that they did this would be evidence that the rate was above the value of the service.

Such an experiment is too fantastic ever to be tried. But the depression of the last four years has staged the experiment for us. This was not done by raising the rates. In fact, they had declined. But the incomes of the people have shrunk even more rapidly than rates have fallen. The reduction in personal incomes has been so great that people were compelled to make a reexamination of the importance, or worth to them, of the various commodities and services which they have been in the habit of buying. With a drastic shrinkage in income it became necessary to drop something out of the scale of living. This compelled buyers to choose between the various things they had been in the habit of purchasing and to omit those which were worth least to them, as compared to the price they must pay. The public retained, in its modified and reduced scale of living, those things whose value or significance was greatest to it, in view of their price.

This process of choice, which we are all compelled to make because of the scarcity of income, or purchasing power, is the very essence of economic valuation and the very heart of the problem of economic conduct. The necessity for all valuation arises out of the scarcity of means. It is only when that scarcity forces us to choose between the various things which we desire and upon which we might spend our limited income that we make a definite comparison of the worth of various items and rank one above the other.

Practically every individual and every family has gone through this process during the last four years. The value to them of various items must be judged by their conduct in retaining some and dropping others. When submitted to this test, the conclusion as to the value of electric service is that it is high, as evidenced by the economic conduct of domestic customers. Throughout the period they have increased their consumption of electricity for domestic use, at the same time that they were curtailing their purchases of other goods, and, let it be noted further, that during the same period of four depression years, users of electricity had invested in electrical appliances the tremendous sum of $2,173,000,000[6]. This fact, together with the increase in domestic consumption throughout the depression, demonstrates unmistakably the public's measure of the value of electric service in the home.

This industry has demonstrated in the past that it will, of its own accord, maintain rates for domestic service which are far below the value of that service in ordinary times, and which will induce the public to use service in undiminished quantities, even during a depression as serious as that which has beset us during the past four years.

The domestic rate policy of the electrical industries has been a sound one. It has been characterized by stability and not by fluctuations. To attack these rates today because of some imagined necessary relation, economic or ethical, between price fluctuations and rate changes, bespeaks a singular lack of knowledge of the history of rates in this industry; and a woeful deficiency of understanding as to the economic structure of the industry or the nature of its operations.

So much for the relation between price levels and the rates for domestic electric service. Turning now to the matter of power rates, we are faced with a somewhat different situation.

The electric utilities of the country have built up a tremendous power load. That load has made possible, to a large degree, existing low domestic rates. This is a fact well known to all of you and to all who may have investigated the facts in this situation. The power load has bettered system load factors. Its great volume has aided materially in reducing unit costs. It has made possible the development of more efficient generating, transmitting and distributing facilities. It has aided greatly in the development of the art, particularly from the engineering and operating standpoints.

During the past four years there has been great pressure to reduce the cost of purchased power to industries. This pressure was due chiefly to two factors —first, the reduced cost of competitive fuels and the lower cost of equipment for isolated plants; second, to the efforts on the part of industrial establishments to reduce their costs of operation.

Many power rates have been reduced during this period. These reductions in power rates have been effected by reductions in demand charges, by modifications in the methods of applying the demand charges or by reductions in energy charges. Today, generally speaking, power rate schedules are on a lower level than prior to the depression. Even if the power loads of 1928 and 1929 could be restored to the levels then prevailing, the revenue from industrial power would not equal the revenue of those pre-depression years. This is a fact not generally appreciated. It will take materially greater power sales than prevailed before the depression to bring back the industrial power revenues of that pe-

[6] Electrical Merchandising—January, 1934.

riod, unless there is a material change in the character of the power load.

During the depression period, the electric utilities have been on the defensive with respect to power rates. Concessions have been made which, from the standpoint of strict cost analysis, were perhaps not justified. The utilities were often confronted with a situation where the loss of a large block of power business and the revenue therefrom would be much greater than the saving in operating expenses which could be effected if the load were not carried. As an example, I have in mind one power customer, the annual revenue from whom approximated $500,000 per year. If that load were lost, the company could save in operating expenses not over $200,000. The loss of that business, therefore, meant a loss in net earnings of $300,000. This, of course, takes no account of the fixed charges because the plant capacity was there, the investment had been made and could not be eliminated. It was better, unquestionably, for the company and for its other customers that the load be carried even at a reduced rate, than that it be lost entirely with its resultant effect on net earnings.

Now this pressure to reduce power rates has been largely relieved. This is due to several factors—the attention required by industries to the matter of codes, the increase in cost of competitive fuels, the higher cost of equipment for isolated plants and the pick-up in industrial activity. The presence of large surplus capacities in many instances will be a constant source of temptation to take on large power loads, at very low rates. While it is undoubtedly proper and even necessary in many cases that the rates for large power loads be worked out on an "additional" or "out-of-pocket" cost basis, it must always be remembered that such basis cannot be justified unless, first, there remains some profit, some return on the investment as a whole which may be applied for the benefit of the company's business generally, and, second, when all customers taking like service under like conditions are given like rates. In other words, there should be no unjust discrimination. Certainly it would not seem that there is any justification in selling power on a basis less than that indicated. Certainly it is not good business to bring about any unjust discrimination as between individual power customers or as between power customers as a class and other classes of customers. Also it would seem clear that it is not sound policy to sell power on less than a competitive basis. An analysis of price levels, an understanding of commodity prices as they may affect production of power and a knowledge of the cost of competitive equipment and competitive fuels is absolutely necessary.

The whole situation calls for careful study by each individual company, a re-examination, if you please, of the power rate situation. When such re-examination has disclosed the facts, they should be faced courageously and the necessary steps taken to correct the situation, if it is out of line. This is not only good business, but it is sound policy from the standpoint of the electric utility's relation to its other customers and to the public as a whole.

Let us not permit a desire to make rates simple and to reduce the number of rate schedules to a minimum lead us into a situation where our structures will be hidebound and will not meet practical conditions.

Let us not be afraid of a number of rate schedules, if such schedules are on a sound business basis. The fact that a company has a number and variety of rate schedules indicates the company's resourcefulness—it indicates that it is alive to the situation and it indicates an active interest in the promotion of business. That management is indeed short-sighted which does not attempt to increase the volume of its sales through profitable rates whenever opportunity offers, guarding always against unjust discrimination.

It is good business to be ready and willing to meet changes in conditions as they arise and make whatever rates are necessary to fit the business, doing the same thing for like customers using like service under like conditions.

In the practice of good business sense and in the exercise of courageous initiative in rate-making by the management lies the future development of electric utility business. There is no use in asserting that the initiative in rate-making belongs to the management unless the management is prepared to exercise such initiative courageously.

The situation confronting the electric utility industry today is a challenge to its courage and resourcefulness. There is need of greater optimism. Never was there greater demand for courage and initiative in rate-making.

CHANGES IN E.E.I. CONSTITUTION

Upon recommendation of the Board of Trustees, the following amendments to the Constitution of the Edison Electric Institute were voted at the Tuesday morning, June 5, session of the Convention:

Section 1, Article VI, is changed to read, *"The affairs of the Institute shall be governed by a Board of not less than seven nor more than thirty trustees, consisting of officers or employees of company members, elected for a term of three years."* This amendment increases the number of trustees possible from 24 to 30.

Section 2, Article VI, is amended to read, *"There shall be appointed by the President, with the approval of the Board of Trustees, an Operating Committee consisting of the President, the Vice-Presidents and not exceeding 20 other officers or employees of company members, who shall have charge of the general activities and business of the Institute, subject to the jurisdiction of the Board of Trustees. The President shall serve as Chairman of this Committee. The Operating Committee shall from time to time determine what other committees shall be created and define the scope of their authority. The members of such committees shall be appointed by the President."* This amendment permits the creation of an operating committee of not exceeding 20 members, the former limit being 11 members.

Section 3, Article VI, is amended to read, *"The Trustees after the election of Trustees at the Annual Convention, shall elect for a term of one year, all officers and shall have power to fill vacancies caused by death, resignation, disability or otherwise, or to remove any officer for good cause."* This revision permits the election of officers before the Convention adjourns.

Section 5, Article VII, is amended to read, *"The Secretary shall perform such duties as shall be assigned by the Operating Committee."*

Article X is amended to read, *"Special meetings of the Institute may be held upon the authority of the Board of Trustees at any time upon 15 days' notice to every company member, stating the date and place of such meeting and the business to be transacted."* This revision permits the calling of special meetings on 15 instead of 30 days' notice.

FACING COMPETITION

By T. K. QUINN
Vice-President, General Electric Company

Address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 5, 1934

I appreciate the subject assigned to me no less than the invitation to appear before you, and out of that appreciation, I warn you in advance that I have come to sell you this morning.

There is plenty of room within the limits of the subject for a comprehensive discourse on the nature, history and development of competition. The prevailing conditions reflected in the very state of mind which suggested the subject for discussion at this time, present a world of material for analysis and review. The place of competition in industry today and its trend and probable future offer a splendid opportunity for an academic speech. Added to all these, there is the natural disposition to present big programs for fine debate and refined deliberation.

I purposely resist these grand temptations and choose instead to talk practically, for a little while, to practical men, about a practical plan and approach in the hope of contributing, however minutely, to the further, immediate progress of the industry. What I shall have to say will have this much merit at least, that it will not take too much of your time and it will, I trust, be clearly understandable.

Inherently the industry is beset by problems of policy. Because of its very nature the industry continually needs more and more friends and greater goodwill. Right now, we should be busier than ever, acquiring them. They are not to be secured on any sound or lasting basis, by verbal defenses or attacks. What is done will always be more eloquent than what is said. Our actions will speak convincingly long after our verbal protests and any breast beating are forgotten. It is on this viewpoint particularly, that I shall attempt to focus your attention.

By way of preface, may I remind you that in this country, at least, we still believe in the beneficent effects of constructive competition. Not the competition of the 19th century. That was a sort of planless, unregulated, counterbalancing of people, countries, enterprises and things, which it was believed led in some miraculous way to the ultimate

MR. QUINN

best for the individual and for society. Even if it suited those older conditions, we know that such a game, without any kind of rules, would not serve the best purposes of civilized society today. We believe now in a refined, somewhat restricted, fairer competition; not, I venture to say, in confiscatory governmental competition with its own citizens.

We must face the competition of current, mistaken public opinion, fed often by intemperate or unfair, although sometimes well intended propaganda, representing that the whole industry is greedy and corrupt. We must face it with confidence that public opinion should not be directed against honestly operated, sound companies. We also face the competition which should and does exist, with ourselves, to constantly improve upon and better yesterday's results. This, I may say, is by all odds the most intelligent competition. Then there is the competition of our industry with all others for the consumer's favor and a share of his dollar commensurate with the value of the service rendered. This is by no means formidable competition for an industry as young, worthy and progressive as ours. We are far from being in the situation of the fellow who said he had so many troubles that they had ceased to worry him.

There is a time in the life of every man, when, having first learned and then taught, he begins to learn all over again. This may also be true of an industry. If you are even approximately in some such state of mind, I may hope for your favorable consideration of the proposals I am about to make.

There are close to 20,000,000 domestic electric customers in this country. One fourth of them have electric refrigerators. Only one twentieth of them have electric ranges. Less than one half of them have washers and vacuum cleaners. A very limited number have water heaters. These figures are repeated so often that they become thoughtlessly mouthed as though they meant nothing. We find ourselves turning carelessly away, half believing that our salvation lies in some other direction. But these wired homes are the select homes of the country. They represent less than 60 per cent of the total number of homes.

It is easy to be content with the really remarkable record of this industry. In ten years the number of persons and firms purchasing light and power almost doubled. But, whether we like it or not—that record is not nearly good enough—not in this impatient, fast moving country.

My next point is that we should not expect an enthusiastic or perhaps even an unusually friendly electrical customer until he has two or more of the major electrical servants in his home. I wish it were possible to shout this into the consciousness of the industry. The strength of such charges as that the June bride in a non-electrical home becomes a servant in September and that an American woman who washes her own clothes is working like a Chinese coolie for a few cents a day—the strength and force in such statements are that they are true.

We may be proud of the industry record—perhaps rightfully so—but it is not good enough. Two thirds of the housewives of this country should not still be breaking their backs over old-fashioned wash tubs, to use a single illus-

tration. There is no plausible excuse for it in humanity's name—none whatever.

The small current customer is a liability directly on the books of the company because the cost of serving him is often greater than the gross payments he makes. But he is a much greater liability as a limited user who does not enjoy the value, usefulness or convenience of the service at his very finger tips. He is a greater liability as a potential user of the major electrical home servants, who should have them but does not. If he happens to fully appreciate their worth and is still without them, so much the worse.

Everything considered, only one fourth of the domestic electric customers can be considered real users of today's electrical service, and that one fourth, my friends, represents but 15 per cent of all the homes of the country. The other 85 per cent have hardly more reason to be friendly than unfriendly to the industry and they are all voters.

We should do very well to concentrate our attention a while on the 15,000,000 or 75 per cent of the present domestic users who do not have the major appliances they should have in their homes. An industry campaign built around the sales slogan "Sell the Other Three Fourths" would serve to crystallize our activities on the really important work ahead.

Now why, pray tell, are the great services of electricity limited to a relatively small proportion of American homes? Let us be sensible about it. The plain, honest answer is that the majority, yes, 75 per cent of the families, cannot afford to purchase them. Monthly household incomes of $175, $150, $125, $100 or $75 do not permit the purchase of anything requiring payments of as much as $10 per month, which can possibly be avoided. These in overwhelming numbers are the really representative homes of America. The prices of current and of appliances are not too high, as we well know, from the profit and loss standpoint of the producers. But they are too high in relation to this overwhelming majority of the pocketbooks of the country.

Fortunately, there is a way out. The payments per unit of electricity may be lowered easily enough if we can only produce and sell more current. We can sell more current if the payments for current and appliances are lowered.

The payments for appliances may be lowered easily enough if we can only produce and sell more appliances. We can sell more appliances if the payments for current and appliances are lowered.

It is a fairly accurate generalization that after 5,000,000 units of almost any product for the home are sold in this country, further sales are not made in appreciable quantities unless the list price is under $100.

As a manufacturer, I am able to tell you today that we can produce suitable refrigerators to list for $80 or less, given mass production on a larger scale than we have heretofore enjoyed. We can produce suitable electric ranges in quantity to list at $75 or less. Other appliance prices either are or can be in proportion.

But this does not finally settle all of the questions.

The credit of the mass of consumers and their ability to pay are governing considerations.

We could sell an $80 refrigerator over a 36 months period for a little over $2 a month and sell more of them in the next three years than have been sold in the past 15 years. We could do so, except for the finance charges, which at prevailing rates, over that period of time, would be prohibitive. They would amount to half the price of the refrigerator itself. What makes these charges prohibitive? Is it the cost of money alone? Certainly not. Is it the credit risk? No. Is it repossession expense? Again no. What then is it? Well, it's the booking, billing and collection expense. Remember, it costs just as much to book, bill and collect $1 as it does $100 or $1,000. The percentage ratio of the cost becomes greater as the amount booked decreases, because the booking, billing and collection cost is practically fixed.

It happens that one of the functions the light and power utility companies are pre-eminently qualified to perform is to book, bill and collect small accounts. They do it efficiently, inexpensively and on a mass scale. The commercial installment credit companies of the country cannot economically handle monthly payments of less than $10. Less than $5 is out of the question. The utility companies on the other hand collect monthly, payments of as little as $2 or less. Merely to add an item of $2, $3, $4, or $5, to the regular monthly bill would involve a minimum of additional expense. The exorbitant cost of handling small installment payments could be more than cut in half, particularly with the new lower interest rates for money. Utility companies could handle the bookkeeping for every appliance sold on their lines, whoever made the sale. The public would know that an economic saving was thus made possible and would gladly give credit to the utility companies for it. Dealers, distributors and manufacturers would naturally be grateful for this help. Each transaction could be handled up to the point of default or beyond as might be pre-determined. Funds to finance these sales could be advanced by the utility company from its own borrowings. Funds could be secured from finance companies. Funds could in some cases be obtained from the manufacturers of the product. Funds could in perhaps most cases, under proper conditions, be secured through the newly organized Electric Home and Farm Authority which was launched in part for just this purpose.

A national move sponsored by the Edison Electric Institute would popularize the whole program and make clear its purpose and benefits.

The result should be to double the present domestic load within three years with strong promotional support. Greater goodwill would automatically follow. Millions more of American homes could enjoy the help of modern electrical servants. Prices of both appliances and rates for the current to operate them would be less. The industry would automatically secure a favorable public reaction. In short, it seems to be a crucial matter of great ultimate importance.

The plan is not brand new. It has been successfully worked, in somewhat different form, by several companies, with beneficial results. It is an important part of the promotional plans of the Electric Home and Farm Authority in the Tennessee Valley. I commend it to you for universal adoption as a practical means at hand to help meet the competition of the times in a manner not inconsistent with modern methods or out of tune with the competitive practices of the day.

Without some such special effort we seem doomed to slower and less satisfactory progress. The objections and fears we may have about it appear to be outweighed by the many obvious advantages. It is a definite, practical plan which can be adopted almost immediately, promising very much more in concrete results than so many of our broad, high-sounding but less tangible, general programs.

Whatever is done should, as I have

(Continued on page 220)

THE BUSINESS OF GETTING BUSINESS

By GEORGE E. WHITWELL

Vice-President, Philadelphia Electric Company and Chairman, Sales Committee, Edison Electric Institute

Address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 6th, 1934

The other day I heard a conundrum, the answer to which, even though involving no tricks, further questions or other artifices so common to some conundrums, nevertheless left me with no idea as to how it satisfactorily replied to the original question asked. So I tried it out on others. They, too, failed to see any point, although there is one. I'll try it on you and see what happens: The question is asked, "Why don't old ladies like moving pictures?" Of course you give up, so here's the answer: "Tall ladders make them dizzy!" Silly, isn't it? And yet there is a point which you will get as you think it over.

The business of getting business in our industry is not unlike the conundrum which I have just asked and which I have answered in a manner which has a point but which very few of you have yet fully appreciated. You are not thinking correctly. Similarly, many are the questions that have been asked about getting increased electricity consumption; many are the correct answers that have been given as to how this can be done; yet, frankly, little has been the practical understanding of these answers that alone can produce the large new use of kilowatt-hours that must be obtained to meet today's conditions. Why is this? We haven't been thinking correctly. We have gaged the present and future by the past. Instead, we should have been blazing new trails unhampered by the fetters of the limitations of our past accomplishments.

The subject of my talk today is what to most of us for several years has constituted a severe headache. It has been hard enough to hang on to what we have had, let alone secure new or additional business. It has been difficult to promote new projects or methods when for every step forward we have slid back two. Fortunately, we have not let these obstacles prevent us from continuing to look forward in our planning; yet I wonder if the psychology of these years has not affected us to the extent that we are too easily satisfied with what today seems like a good job?

MR. WHITWELL

The rapidly changing times compel us to change the standards by which we measure accomplishment.

This seems an ideal time to take an inventory. We are, figuratively speaking, at the crossroads and I cannot help but feel that the forces being exerted externally will change the course of our business for a long time to come. Your job and my job require that we so choose the way at this crossroad as to secure the smoothest travel over the longest distance, taking advantage of conditions as they exist and preparing for what difficulties we see ahead.

This is a sound course of procedure. Naturally, we do not like the obstacles placed in our way, but we get nowhere by permitting our dislike to sap the energy which we can more profitably expend in taking advantage of the favorable factors which are in evidence if we will see correctly and think in line with the new conditions.

Has it occurred to you that in spite of the unfavorable publicity recently directed at our industry, there has been, during the past year, more free front-page news about the advantages to the householder of a wider use of electrical appliances than we, as an industry, were ever able, in the past, to obtain? This can be transformed into a desire for, and then the purchase of, more appliances to lighten the household tasks. The very fact that people can be aroused—and certainly they have been by the events since March 4, 1933—indicates that they are not totally and permanently apathetic and that, for the first time, many are considering questions to which, in the past, they have given little or no thought. The publicity on electricity use in the home is something for us to capitalize. Have we done so yet or have we used the standards of the past, gnashed our teeth because much of the news about us was unfavorable, unfair and untrue, and completely failed to realize that front-page space on home appliance use is something that money cannot buy?

There is no formula for getting business. The world no longer beats a path to the door of the man who is content merely to make something better than his neighbor. Both he and his neighbor have to sell the value of their products. You may make the best electric refrigerator in the world, but if your customer wants an automobile, how do you make the sale? If you are alive to your opportunity, you point out the advantages of owning not just your refrigerator, but an *electric refrigerator* —creating in the prospective customer's mind an element of doubt as to whether, after all, he had not better defer the purchase of a car until he can own a refrigerator, which, enabling him to save more, will permit him more easily to purchase the car. The point is that we must sell the value of the services rendered by the product we have to sell.

Too much emphasis cannot be placed on a knowledge of the buying habits and buying ability of those to whom we are attempting to sell. Without an intelligent, detailed and painstaking study of these characteristics, we cannot hope to adapt our policies or program to meet their needs. A simple but effective demonstration of this truth is obtained

by checking up the list of our unprofitable customers. In an average company, the unprofitable residence customers number about half of the total. These are the customers whose annual kilowatt-hour consumptions must be raised in order that rate reductions may be effected soundly in the much discussed higher blocks. Any forced or expedient reduction at the present time to these small users will only aggravate the problem and increase the percentage of unprofitable customers, thereby rendering a further injustice to those whose increasing use entitles them, perhaps, now, to rate reductions in the lower blocks.

Are you making a survey of your unprofitable customers to determine their requirements and the methods necessary to increase their annual consumptions? Or are you satisfied to increase your kilowatt-hour consumption per residence customer by sales of load-building equipment almost entirely to already large users? Certainly this latter job is very necessary but it is only one of the two jobs that must be done if your rates are to remain reasonably equitable and, at the same time, become low enough to satisfy the "yardsticks" of today.

Yes, knowledge of the market is essential so that a planned program can be arranged. And this program should cover, not merely this month or next, but this year and the two or three that will follow. Plans worked out in detail are only necessary for the year at hand, but quotas of accomplishment can be set for several years ahead. This eliminates the sporadic efforts with which we have all had sorry experiences. They are a few of the fetters which still chain us to the past.

But the backbone of even a sustained effort lies in our ability to sell the value of our service, constantly hammering on that idea until it is accepted by the public. Too often have we talked and written about the glories of our size, our annual expenditures, our generating stations, our miles of cable and transmission lines—all of which, if laid end to end, will get us nowhere if Mrs. Smith does not realize the value to her of, let us say, a vacuum cleaner and how long she can use it for a nickel. Our job is to so manage that we provide electric service of such value that the customer feels that his money is well spent. I believe this can be done only by sustained, coordinated efforts in all branches of our selling. Whether we actually sell appliances or equipment over the counter or not, we have to sell the value of the service we render. And, fortunately, our new-found competitors are doing some of this selling for us on the front pages of the newspapers.

In the past, much of our advertising has been of those things which appealed to us. Therefore, we have felt that, inasmuch as we are human beings, they should have appealed to other human beings—our customers. Rather, beginning today, our appeals should be to those things in which these customers are interested.

The men in this audience do not care about the size of the factory producing their shaving soap, nor the investment in equipment necessary to make and fill the tube. But what we all consider is whether that soap does its job efficiently; does it leave our faces raw? If so, we change the brand regardless of how vast an enterprise was necessary to provide us with one tube of the stuff. So it is with the electric utility business with this exception, that, not being able to change the brand, the residence customer concentrates his animosity on those in the electric company with whom he deals and forthwith reduces his use of electricity. The industrial customer listens at once to the persuasive sales-talks about private plant operation.

We have only begun to change our attitude in this respect. Beware lest our recent resigned attitude toward trouble persuades us that we have changed our attitude sufficiently completely. I am convinced that we, as an industry, must discard our preconceived notions of utility advertising. We have been guilty of the sin of "talking down" to our public, which, aside from being decidedly poor taste, creates little understanding. But we can humanize the service which we have to sell. With a little thought and ingenuity, we can change the customer's feelings toward electric service from a thing which takes money away from him every month to a means of providing pleasure and comfort for a comparatively small expenditure. To do this, some device is necessary to translate electric service from the indefinite and almost indefinable thing that it is to a human, appealing individual—an electrical servant.

In a recent article on Oil Circuit Breakers a phrase was called to my attention which I think could well be applied to the electric current bill:

"Things known but never seen lack the final touch of reality." It is a known fact that the telephone companies do not experience as many complaints on bills rendered as the lighting companies. I think this is due, in part at least, to the fact that anyone making a telephone call is required to exert a certain amount of effort in order to negotiate the call. The reaction is that considerable effort has to be expended in order to complete the call and the user decides he is getting something for his money. It is true that you do not see the sound waves any more than you see the electric current, but you can hear *yourself* talk. When the housewife makes a telephone call she generally has something to remember it by when the bill arrives, but she cannot tie in the switching on of the electric iron or the vacuum cleaner with the kilowatt-hours presented on the electric light bill.

Nor is the rate charged per kilowatt-hour necessarily a controlling factor in obtaining large consumptions per residence customer. The truth of this is proved by the usage in the city of Tacoma, Washington, where, according to a paper presented last year by the Superintendent of the Lighting Department of the City of Seattle, the average annual consumption in 1931 was 1550 kwhr, but where only 27.5 per cent of the residence customers then had ranges, water heaters or house heaters in spite of a rate of one cent per kwhr in the low block. The balance, or 72.5 per cent of the customers, had an annual consumption comparable with the average for the United States, or about 600 kwhr per year. Since 1931, the average annual consumption per residence customer in Tacoma has dropped from 1550 kwhr to about 1220 kwhr in 1933. Tacoma stands for abnormally low rates but the value of electric cooking had been sold to only one-quarter of the resitial customers in 1931. Better jobs have been done by privately owned utilities with higher average rates.

To most people, rates do not mean much of anything. But tell the housewife that five cents a week will operate her washing machine to wash all the clothes for her family of five and she can understand that. Show her the cost of doing a certain job whether it be vacuum cleaning, ironing, cooking, toasting bread, or obtaining the hours of entertainment provided by the radio. This, I believe, is the way to sell the competitive value per dollar of electric service. The way not to sell electricity is to tell the bewildered householders that if they use so many kilowatt-hours, they will be charged so many cents for

each succeeding one. In the first place, they may not know what a kilowatt-hour is, and after all, why should they? In the second place, they may not know what a kilowatt-hour will do, and does it matter? But they do know that an ordinary light bulb burning so many hours for a cent is a great convenience.

Anyone will admit that the utilities have done an excellent job in providing capacity to meet the needs of their customers. Little more money need immediately be sent for facilities. But to increase the rate of selling, more money than in the past—much more money—is necessary per sale. With you, in this audience, lies the future of this industry of ours. You can so plan that if pressure is brought to bear for excessive rate reductions before our normal growth warrants them, we as an industry will be able to meet the demands of the public with a minimum of loss. But to accelerate the rate of selling of domestic use we must spend real money for advertising and promotional work if we are to divert our way more of the family budget and thus, through domestic sales which will be two and three times those now enjoyed, put ourselves in a position to economically reach low rate levels that will benefit both the customer and us.

It will be necessary to completely revise our own point of view. One thousand ranges in a city of 300,000 customers may be a good job, judged by 1930 standards, but they are of little avail under the conditions of 1934. In such a city 10,000 are needed this year, 15,000 next, and so on. Today, merchandise managers in such cities point with pride to the sale of 100 water heaters. Five thousand per year are the least that will make possible the solution of our present problem. It can be done. To do it, however, requires vastly increased appropriations which will appear out of line with past experience. But, having sold the added load, enforced or voluntary rate reductions will result in so much less loss of net income than that which would have been incurred through the same rate reductions but without the new load, that I do not hesitate to predict that the increased promotional expense will seem small indeed when compared with what the reductions in net income might otherwise have been.

And so, your Sales Committee has tried this last year to sell the value of electric service to the customer, hoping that you will provide for your sales departments more and more sinews of war. The program which it has prepared for you today deals entirely with the business of getting business. We will try to cover a few of the essential points to meet present-day conditions, and I hope that you will go away with some good idea for increasing sales that may have been prompted by that which will be offered at this meeting. The Sales Committee has had an active year since the convention of last June and you will be interested in a few of the highlights of its accomplishments.

The Better Light—Better Sight Campaign, supported financially by manufacturers and utilities, under M. E. Skinner's able guidance, developed rapidly because of the fact that its fundamental appeal was universal better sight. The development of the Sight Meter was most fortunate, for it gave the lighting salesman a device with which he was able to show his prospect what was wrong with his lighting installation rather than having to describe its deficiencies. The certified lighting program of the Statler Hotels did much to increase the effectiveness of our own activities by an invaluable national advertising campaign. There were many other benefits, the full effects of which are only beginning to be felt. I am not going to say anything about what the plans are for the coming year, as the Better Light—Better Sight Committee has prepared is own presentation which will appear later on this program. Suffice it here to say that a continuous, national effort in selling the value of light in terms of eyesight conservation—a simple, elementary proposition, if you will—has sold for electric utilities many hundreds of thousands of kilowatt-hours during the last year.

The Subcommittee on Air-Conditioning, under C. E. Michel's leadership, has been collecting and correlating data of interest to this newer branch of our activities. Much useful information has been gathered concerning the uses of air-conditioning as well as the factual data on specific applications. They have given special attention to the study of sales and promotion methods, making recommendations for increasing the air-conditioning load on utility lines. All of this material appeared, last month, in an exhaustive report released by this Institute. Intelligent use of the material in this and other publications, coupled with reasonable money expenditure, and cooperation with dealers and manufacturers, will bring real results in this field.

For this year, we have under way a National Electric Cookery Program with the slogan, "Electric Table Service Saves." This activity is part of the work of the Residential Subcommittee headed by D. M. DeBard. Based on the same simple underlying principles that have characterized the Better Light—Better Sight campaigns, this activity turns the spotlight on the so-called smaller heating and motor driven appliances. Your participation in it, solely in connection with your problem of the unprofitable residence customer, can make it pay you big dividends. But your results will depend entirely upon the extent to which executive support is given to your local plans for participation. Here again is an activity jointly promoted by all branches of the electric industry.

I believe the Rural Sales Subcommittee, with P. H. Powers as Chairman, wins the prize for the unusual. In spite of all the jokes about Americans and our bathtubs, this committee has embarked upon a National Running Water Campaign, the need for which became evident as a result of a national survey. Think of selling something that most of us mistakenly accept as being universal! It is expected that the promotion of water pumping systems in rural communities will induce parallel development of other applications such as small scale irrigation, water heating and the more general use of water on farms. Yesterday, Mr. Powers detailed his program at length.

Briefly, the Electric Water Systems Council, made up of representatives of the Rural Subcommittee and the pump manufacturers, will have charge of the activity. This Council has prepared a direct-mail folder to be distributed here at the Convention, which will be available for use by any company desiring to purchase a supply. The Council suggests that the utility companies interested in this campaign arrange for group meetings with dealers in their territories to build up a definite, coordinated plan for each locality. The manufacturers are informing their dealers and distributors, sending them copies of the plan so that they will know of the utility's part in the program. I am told that the pump manufacturers are very enthusiastic and ready to do more than their share.

Here is an opportunity for better cooperation between ourselves and the local dealers. Let us not overlook a good bet. The first phase of the plan calls for intensive promotion in August

and September of this year, with the second phase in the spring of 1935, and the final phase in the fall of 1935. May I suggest that you inspect the display of publicity material which is now in the lobby of this hotel and then go home and lend real support to this program—simple though it may seem. Remember that a year ago the idea of selling light with a Sightmeter seemed almost ridiculously simple, too. Yet that idea brought big results.

W. H. Sammis, as Chairman of the Industrial Power and Heating Committee, reports that his committee is collecting data for a report on gray iron melting. A committee was sponsored for a discussion of the standardization of the form of rates to foundries. This was carried on in cooperation with the Power Committee representing a number of foundry associations. Commercial cooking has come in for consideration and articles are in preparation for the trade papers. Much helpful information has been collected to be issued in reports on Industrial Heating, the supply of service for oil and gas line pumping, Diesel engine competition, as well as hotel and office building private plant competition.

The Wiring Subcommittee, under the direction of J. D. Noyes, has been working actively but quietly in lending its support to the development of the Industry Code Conference but is not ready at this time to render any report. This is probably not the time or place for discussion of the old problems of the National Electrical Code, Underwriters' Laboratories' approved materials and the Uniform Electrical Ordinance. It should be said, however, that joint industry activities in an attempt to obtain sane solutions to these problems that will be fair to the public, manufacturers, utilities, insurance interests, municipalities and other affected parties are going forward. Progress is slow, and unfortunately at the moment, due to wide differences of opinion between ourselves and one other of the interested groups, almost an impasse has been reached. To surmount obstacles such as the one that developed as recently as last Friday, our executive support must be extended to those in the utilities who have given skillful leadership to this activity. My appeal to you, particularly those of you who are sales executives, is that you interest yourselves in and inform yourselves on these problems and, if called upon, lend your active support. Satisfactory solutions to these problems will result in greatly widened markets for the use of electricity.

Valuable as the contributions of these subcommittees are in themselves, they are good only for what we can do with them. They are supplementary to your own activities and their value lies in what you can do with the material which has been made available and with the assistance that comes from planned activities. May I express, at this time, my appreciation of the work of the members of the Sales Committee, the members and chairmen of the subcommittees and those in Headquarters, particularly Mr. Greenwood, who have unremittingly labored in the interests of your companies and mine.

I should like to call for a showing of hands by those in this room who use electric ranges, water heaters and/or re-

A Section of the Audience at the Second Gene

frigerators in their own homes, but I do not want to embarrass you. A roll-call of a list of the smaller appliances would also be illuminating. Have we, ourselves, made *full* use of the service which we sell? With exceptions, I believe the answer would be "No." If we, who are supposed to know more about the advantages of electric service, are not sold, how can we expect the public to be sold? It seems to me this is an admirable time for all of us to give a great deal of consideration to a wider use of electrical appliances by employees of electric companies, and, after all, executives, department managers and supervisors are employees. An appliance in regular use in an employee's home is an excellent salesman.

As an indication of this point, consider how frequently our friends call upon us to supply information concerning our business. It may be anything from when the lights will be turned on after a severe thunderstorm, to the relative merits of two flat-irons. Perhaps we are irritated because it may be after office hours, but if we stop to think, it is a high compliment because to our friends we are the electric company—we are creatures endowed with superior knowledge, at least to them. I believe you will find this true in the case of every employee and his circle of friends.

We should make every effort to sell employees on the value of electric service, for if thoroughly convinced to the point of actually using the appliances, they become immediately more valuable in their jobs and hence to their company. The means by which this can be done will differ in various localities due to the dealer situations, but no matter what the limitations, some way can be worked out to supply employees with electrical appliances at fair prices and on reasonable terms. The results to be obtained are obvious.

I have dwelt at some length on the increased load which we must obtain through the residential customers because I believe that this group is today uppermost in our thoughts. My remarks are equally applicable to the industrial and commercial customers. Those of you whose activities are confined to this group of customers have probably been waiting for me to stop talking about the pots and pans.

We have sold the value of our service to our larger customers in years past to a large extent. However, now, the character of our market is changing. Formerly it was a poor year when we did not shut down a goodly number of private plants. This market is pretty well covered, so that to extend our activities among commercial and industrial customers, new developments and applications are of prime importance. Air-conditioning bids fair to replace the private plant as a source of new industrial and commercial revenue to us.

It would do no harm for each one of us to set aside an individual or a group in our organizations whose duty it would be to acquaint themselves with the new developments so that information can be readily available, and, if need be, campaigns organized to cover carefully selected lists of customers. As an example of what I mean, reference can be made to campaigns on small heating

(Continued on page 220)

t the Second General Session of the Convention

WINNERS OF 1934 PRIZE COMPETITIONS

The winners of the several awards administered annually by the Edison Electric Institute were announced at the closing session of the Convention by Mr. Frank W. Smith, Chairman of the Prize Awards Committee of the Institute.

On this occasion presentation of the Edison Electric Institute Medal was made to five employees of member companies, who, by the Schaefer Prone Pressure Method had successfully resuscitated individuals suffering from electric shock. These were the first awards of the new Institute Medal that have been made.

The awards other than the Edison Electric Institute Medals are divided into two groups. The first includes those in recognition of outstanding accomplishments of companies, and embraces the Charles A. Coffin Award, George A. Hughes Award and the Thomas W. Martin Award. The second group includes prizes to individuals for essays on subjects relating to the electric light and power industry, and embraces the H. M. Byllesby Prizes, the B. C. Forbes Prize, the A. L. Lindemann Prizes and the James H. McGraw Prizes. The many valuable contributions brought forth through these competitions will be made available to the industry through publication in the EDISON ELECTRIC BULLETIN and the trade journals. The entries will be on display at the general office of the Institute at New York where they will be available to member company representatives.

In most cases the recipients were present at the meeting to receive the awards from the hands of the donors. In giving his report, Mr. Smith expressed his appreciation to the donors of the awards and to those who took part in the several contests, and outlined the points wherein the winning entries in the contests excelled. (The report of the Prize Awards Committee will be published in the next issue of the BULLETIN.)

Prizes were awarded as follows:

Edison Electric Institute Medal

To member company employees who have successfully resuscitated individuals, suffering from electric shock, by the Schaefer Prone Pressure Method.

Medals awarded to—

MICHAEL BUTCHKO, Duquesne Light Company, Pittsburgh, Pa.

HENRY J. KELLS, New York and Queens Electric Light & Power Co., Long Island City, N. Y.

Mr. Frank W. Smith, Chairman of the Prize Awards Committee, Edison Electric Institute, Mr. Samuel H. Ferguson, President of the Hartford Electric Light Company, and Mr. E. W. Rice, Jr., Honorary Chairman of the Board, General Electric Company—Mr. Ferguson is receiving the Charles A. Coffin Medal, awarded to his company for outstanding accomplishment, from Mr. Rice.

ALEXANDER MACPHERSON, Bronx Gas & Electric Company, New York, N. Y.

EDWARD MARTIN, Northern New York Utilities, Inc., Rome, N. Y.

JAMES A. ROGERS, Virginia Electric & Power Company, Richmond, Va.

Prizes to Companies for Accomplishments in Specified Activities

The Charles A. Coffin Award

To the public utility operating company which has made a distinguished contribution to the development of electric light and power for the convenience of the public and the benefit of the industry.

Gold Medal awarded to—THE HARTFORD ELECTRIC LIGHT COMPANY, Hartford, Conn.

George A. Hughes Award

To the company showing the greatest contribution to the development of domestic electric cookery load.

Cup awarded to—THE IDAHO POWER COMPANY, Boise, Idaho.

Cash Prize of $500 to—MR. L. W. BRAINARD.

Thomas W. Martin Rural Electrification Award

To the company showing the greatest contribution to the advancement of rural electrification during 1933.

Bronze Plaque awarded to—VIRGINIA ELECTRIC AND POWER COMPANY, Richmond, Va.

Prizes to Individuals for Papers on Subjects Relating to the Electric Light and Power Industry

H. M. Byllesby Award (Subject—Accounting)

First Prize, $100—MR. H. A. WARDENBURG, Commonwealth Edison Company, Chicago, Ill.

Second Prize, $50—MR. A. J. KIEFFER, Louisville Gas and Electric Company, Louisville, Ky.

Third Prize, $25—MR. ARTHUR J. MURPHY, Wisconsin Public Service Corporation, Sheboygan, Wis.

B. C. Forbes Award (Subject—Public Relations)

Cash Prize, $250—MR. GEORGE ANTHONY PALMER, New England Power Engineering and Service Corporation, Boston, Mass.

A. L. Lindemann Award (Subject—Electric Cookery)

First Prize, $150—MISS GEORGIANNA LINSTID, Virginia Electric and Power Company, Richmond, Va.

Second Prize, $100—MISS ANNE GLOTZBACH, Southern California Edison Company, Ltd., Santa Ana, Calif.

Third Prize, $50—MISS MAYME E. MILLER, Minnesota Power and Light Company, Duluth, Minn.

James H. McGraw Award (Subject—Engineering)

First Prize, $250—MR. FRANK E. SANFORD, Union Gas and Electric Company, Cincinnati, Ohio.

Second Prize, $150—MR. JAMES L. HOLTON, New York and Queens Electric Light and Power Co., Flushing, N. Y.

Third Prize, $100—MR. S. O. SCHAMBERGER, New York Power & Light Corporation, Albany, N. Y.

ADJUSTING OPERATIONS TO PRESENT TRENDS

By J. L. HECHT

Vice-President in Charge of Operations,
Public Service Company of Northern Illinois, Chicago

Address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 6th, 1934

The stable condition of the operating electric utilities today, after four years of depression, may, I think, be taken as an indication of the fundamental soundness of the industry, which I feel is on the threshold of a new forward movement in spite of the many adverse conditions which have had to be met. It is not my intention to talk about the various specific problems which have been thrust upon us, or about how they originated, as you are all undoubtedly quite familiar with the events of the last few years. On the contrary, I shall address myself more especially to the task of telling how some of these troubles have been met, and to a large extent overcome, by a typical large operating company.

The years since 1929 have brought with them numerous problems for the utilities, of which four outstanding ones are:

1. Reduction in volume of output and of revenue.
2. Further reduction in revenue by reason of stringent rate regulation.
3. Increase in operating expense caused by various conditions imposed by laws and regulations.
4. Additional taxation imposed by all branches of government from Federal down to the smallest municipalities.

In addition, there is a fifth problem which has been in some respects the most troublesome of all, and that is the fact that the almost entire absence of construction activities and of the engineering work that goes with them has made entire departments and a large percentage of the personnel practically unnecessary. This complex situation has forced many utility companies into the position where, after having developed well-organized methodical procedures based upon years of experience during continued growth, it became necessary to cast to the winds all precedent, formulate new plans of procedure, and in many instances to do a quick change of policy with regard to organization and to general methods of conducting the company's operations. Such was the case in the company with which the speaker is associated.

For nearly three decades we had been

MR. HECHT

accustomed to consider as normal something like a 15 per cent increase in output each year, as the dual result of developing the potential business within the company's territory and of expanding its borders to take in more customers. In many years this rate of increase was exceeded. All of our operating policies were based on the need for a steady and continued expansion of the physical property and of the organization. We were put to it some years to meet the growing requirements, both in facilities and in personnel. In 1930, however, we were abruptly brought to a realization that a new order of things had come about. And in my contacts I have found that what I have just sketched in connection with this company was essentially the same in many other utilities.

The problem confronting us, due to the necessity of meeting the rapidly changing conditions, was whether to some extent we should mortgage our future by drastic changes in organization, in methods of operation, and perhaps standards of service. On the other hand, it should not be construed that all the problems which arose had to be disposed of by some expediency, as the depression, like the proverbial "ill wind," also created a situation peculiarly ideal for the introduction of improvements in organization and in operating practice which would have been difficult to apply, or even to visualize, so long as business conditions continued along the trend which we had been accustomed to call normal.

Summarizing briefly, "adjusting operations to present trends" resolved itself into two major divisions, as follows:

1. Placing in effect certain emergency measures or expedients due to dire necessity.
2. Placing in effect, by virtue of favorable circumstances, certain more permanent improvements in organization and in operating practice.

Enlarging on each of these two divisions respectively, there will follow some of the most salient points which came to notice during the readjustments. There are, of course, numerous other factors and details which might be discussed if time permitted, but the following have been picked as typical of the conditions which had to be met.

Naturally, one of the most serious organization problems encountered was in connection with the engineering and construction forces, which had been developed in keeping with the accustomed program of expanding the property. With the sudden cessation of nearly all expansion, and yet with the need of maintaining for the future a nucleus about which to rebuild such an organization, we were faced with the advisability of breaking away from what had been considered good lines of organization, namely, the figurative erection of a stone wall between the operating staff on the one hand and the engineering and construction organization on the other, which I have always considered a good practice to prevent needless sacrifice of operating efficiency during periods of heavy expansion and construction. Fortunately, in our case, we had for upwards of 25 years followed the policy of developing our engineering and construction forces chiefly from the operating

personnel of the company so that when the business trend reversed it was quite practical to transfer many of the key men in the engineering and construction departments into operating positions, and to move back operating men who were junior in the service to less important positions.

The solution of the personnel problem carried with it the necessity for exercising great care and ingenuity in selecting, shifting, and transferring help to cause the least hardship to individuals and to retain the maximum number of employees having valuable company experience. The reduction of working hours in industry, utilities included, made it necessary to add help in certain departments, whereas the cessation of certain types of work resulted in a temporary excess in other departments. The natural tendency was, of course, to use the excess employees from one department to fill the jobs that had been created in others, but this was not as easy as it sounds since such direct transfers would have led to placing many square pegs in round holes. However, it was realized that potential material was at hand within the organization and a rule was adopted that there would be no additions to the payroll from outside, except in a very few unusual situations. General transfers of help throughout the entire company, as well as special training, were resorted to in order to fill all positions from within the company's organization. This shifting of employees to keep them on the payroll assures the company of a seasoned personnel for future expansion and likewise, I think, the experience in varied activities will be of considerable benefit to the employees in their future service with the company.

In the early experiences of many of us, we grew up in organizations where it was not unusual for one man to have several apparently unrelated duties which were not very different from what we see in the screen comedies where one man in a small country hotel "doubles" as clerk, bell boy, porter, etc., by merely changing the label on his cap. During about the first 30 years of this century, while the growth and expansion of our business was exceedingly rapid, the specialization of employment became more and more the rule. I feel that we are now in a situation where we should revert somewhat to the type of organization where versatility and capacity for carrying on various functions must be developed among the individual employees, and it is my opinion that a new generation of broad-gage operating executives to replace the highly specialized or, as I might say, departmentalized executives, will be eventually one of the good results that will come from the present condition.

Any adjustment of operations to present conditions naturally carries with it a review of all activities from the coal pile to the customer's meter. During times of expansion, in order to facilitate the work for department heads and executives, report systems usually based on routines for the collection of voluminous detailed records naturally expand, sometimes to large proportions. Under conditions such as surround us today, it is more practical and even necessary for department heads and executives to be closer to the work and to have a more intimate personal knowledge of what is going on, but unless a careful review is made of reports they will automatically continue, whether essential or not. Yet, if these routines and reports are too drastically curtailed, we may suffer a loss of the value of much of the previous work and serious interference with the necessary flexibility for making rapid expansion in the future. Obviously, first consideration should be given to those activities which can be temporarily discontinued, and then picked up again in the future with a minimum of loss. Considerable ingenuity must be exercised to choose these items and to determine for each the elimination or the extent of curtailment which can be made.

This thought ties in directly with another, which is that when an attempt is made to eliminate superfluous employees and a review is made of their work it may be found that all are busy, but, if a study is made with the idea of eliminating reports and of simplifying routines, it will be found that there is no work left for certain employees who had been quite busy on routine matters in the past when more routine was essential.

In contrast to the more temporary expedients discussed above, no doubt all of us have felt at one time or another that there were certain changes in organization or in operating practice which we would have liked to make as permanent improvements, but the then prevailing conditions made it unwise or impractical to put immediately into effect such changes. Under recent conditions, with many activities at low ebb, the situation presented an opportunity for putting into effect organization changes and improved operating practices. Such improvements may or may not realize the maximum immediate benefit, but will be advantageous as business picks up. To convey an idea of a few of the many important changes of this nature which we placed into effect, I cite the following for illustration.

One of our basic divisions has always been the line department, consisting of numerous unit gangs, each equipped with a motor-truck and headed by a foreman. The unit gang in the past generally consisted of from four or five to as many as a dozen men, using a heavy truck from 2½ ton to 5 ton capacity, and was equipped to handle almost any type of activity in connection with transmission or distribution operation, maintenance, or construction. These gangs also had the duty of restoring service after a severe sleet or wind storm and of taking care of other major outages. Each gang had its complement of first-, second-, and third-class linemen, groundmen, and foreman. In order to efficiently employ this crew it was necessary to have a large volume of work of a continuous nature which was largely provided by the construction of new facilities. After construction work was reduced to a minimum, the line gang had to fall back to the necessary activities of operation and maintenance. In addition to the personnel required for these activities, there still remains a necessity for carrying a sufficiently large personnel to restore service promptly after major outages, and this requirement generally determines the minimum personnel to be carried. Obviously, under present operating conditions the large line gang became an unwieldy unit.

This situation was found to be ideal for the utilization of small crews consisting principally of two-man gangs placed at strategic points throughout the territory and equipped with 1, or 1½-ton truck having higher speed and lower operating cost. These small units can take care of most of the current operating work and in addition accomplish a scheduled amount of maintenance and of tree trimming, in order to employ the men and trucks at a high load-factor. This type of gang may also be expanded as necessity requires by the addition of less experienced workmen and, through flexibility of dispatching, may be combined into larger crews for specific jobs. The men employed on these two-man gangs must necessarily be skilled in handling all kinds of work, and generally would fall in the classification of first-class linemen. As a result of the

decrease in construction work, the line department naturally finds itself now composed of a large proportion of employees having long service records, and of course the higher classes of skilled workmen such as foremen and first-class linemen make up the majority of them. These small operating units are of considerable assistance in obtaining maximum value from these highly trained men. In addition to the small gangs operating from their several locations, it also became necessary to maintain at some central location within the operating area a crew to take care of such heavy line construction and major maintenance as might be required. Also, at times of outages this central crew acts as a common reserve to be drawn upon for supplementing the smaller crews in the affected areas.

An examination of the operating districts with respect to their size and to the nature of their territories can profitably be carried on along with the analysis of the line gangs or other operating units. To a considerable extent our operating districts or divisions were originally delineated many years ago, based on the distance the line gang could reasonably travel from headquarters and back each day. The potential distance has increased tremendously during the past decade principally as the result of better communication and much improved transportation induced by the improvement of highways, the advent of the hard road, and the marvelous advance of automotive design. By taking advantage of all these, the two-man gangs previously referred to have become much more mobile units than larger line crews so commonly used in the past. Extending the same line of reasoning to take full advantage of the improvements in communication and transportation along with the changed operating conditions, it became evident that the territorial lines or boundaries, which had been developed originally due to local conditions or to the acquisition of properties in certain groupings, could be considerably enlarged. In the case of the Public Service Company of Northern Illinois, with 420,000 customers spread over an area of approximately 6000 square miles, the organization had been set up on the basis of 11 districts more similar in respect to area than to volume of business. Each division had a small independent and rather complete organization which was justified at the time it was established, prior to the advent of hard roads, and which continued to be justified, even with improved transportation facilities during the period of rapid expansion. In view of the various changes and tendencies already described, it was found that the small districts could advantageously be regrouped into larger units replacing the 11 supervisory organizations of assorted sizes by three well integrated organizations each of which would care for approximately 1/3 of the company's customers. Such an arrangement lent itself to:

1. Very decided reduction in overhead as a result of elimination of supervisory forces in all branches of operation.
2. The justification for having a higher grade of supervision in each of the new divisions, and as a logical sequence this permitted transfer to the divisions of many operations and functions (which otherwise necessarily had been carried on by centralized groups in the general office) making each division practically autonomous in its operations.
3. In consequence of the foregoing, the ability to bring about the drastic reduction in the centralized organization (commonly referred to as the general office), with the beneficial effect of having the greater part of the company's personnel in the field where its business and operations are conducted, thus giving these people a closer contact not alone with the details of operation but also with the customers of the company.

In making this change, it was borne in mind that the public have become, in general, more critical than ever before and care was taken to insure that the customers receive even a higher degree of service, if possible, than had been rendered in the past.

The actual type of organization structure is no doubt a hobby with nearly every executive. But whatever the form of organization, simplicity and direct control should be the foremost consideration, and present conditions urgently demand that a straight line of authority be used to the maximum rather than any large amount of functional control.

Many utilities represent the consolidation or acquisition from time to time of several smaller companies into one more or less unified operating company, and many of the activities and situations which existed in the smaller companies have been retained, and to these have been added the complexities of the larger organization. The average utility, then, and I believe Public Service Company of Northern Illinois is probably a typical example, became inherently large and complex in the course of its normal development. The operating executive must be ever on guard to see that the many advantages which accrue to the large company as compared to the smaller are not offset to some considerable degree by the complexity of operation on a larger scale and by the many collateral activities to which the larger utility usually falls heir. Perhaps one of the main virtues of the smaller operating company was its inherent simplicity, which by its directness of action reacted very strongly to build up customers' good-will. The best method of coping with the evolutional complexity of the large organization is through the proper arrangement of, and functioning of, the organization. The company's organization should be developed to the point that the line of authority is direct and simple. Every effort should be made to eliminate those conditions under which responsible executives report to several superiors on different activities, as in attempting to carry out the desires of each, the executive is likely to experience difficulty in taking care of the uncoordinated assignments, and the actual accomplishments of himself and his staff are thereby considerably lessened. The organization should be so arranged that those necessary plans and policies which must be developed by a central organization will be executed through a direct and simplified line of authority.

Some of the changes or improvements which have been made in operating practices and organization of the Public Service Company of Northern Illinois are in the nature of expediencies, which may be revised or even reversed as conditions change, but most of them we feel are of a permanent character, particularly the formation of the major operating divisions. As a matter of fact, we are probably not yet experiencing the full benefit of this change, but as business picks up we will be in a position to realize the benefits of increased efficiency. It would be difficult if not impractical under conditions which prevail in times of normal business to make such a major reorganization as has been outlined.

The foregoing has been along the lines of instituting economies and of contracting the organization. Such is the present-day trend, to a large extent a result of necessity, but I feel it is essential that attention be directed to certain activities which may very seriously hamper the company's progress if they become submerged in a wave of economy without proper safeguards. I refer for example particularly to the sales activities. It goes without saying that our future progress depends almost entirely on a

(Continued on page 221)

CREATURE vs. CREATOR

By HON. JOHN J. JACKSON

General Counsel, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

Address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 6th, 1934

In coming before a meeting like this I am always reminded of the horse thief who, in the Wild West days, was caught by the Vigilantes. You will recall they made short shrift of a horse thief by hanging him to the nearest tree. So the Sheriff had this fellow up on a temporary scaffold with the rope thrown over a limb and the dark hood drawn over his face, ready to push him off. Down among the crowd was a weazen-faced little individual who piped up and said, "Sheriff, I think we ought to point a moral from this affair and I would like to say a few words." The Sheriff turned to the prisoner and said, "Have you any objection to his making a speech?" The fellow said, "No, but hang me first."

I have always been extremely fond of Holy Writ, and I recall that in the beginning the Heaven and the Earth were created. You remember at that time the earth was void and darkness was upon the face of the deep, and that pretty well describes our present condition, so we're just about back where we started.

Anyhow, the poor old world has been trying to work out its salvation ever since.

And I recall, too, that the Son of Man was born, and that never in His whole life did He try to make Himself greater than His Creator, the Father. That one feature should make Him divine because no modern youth but thinks himself much wiser than his own father.

When our Government was first established it was a pure democracy. In other words, it was set up and run as a government later described by Lincoln as "of the people, for the people and by the people."

At that time a handful of people set up the government as their servant—as something which could render them a service, the creators in turn making proportionate contributions to cover the cost of such service. But the creature they created expanded with such rapid strides that it began to ignore its creator. Instead of taking the authority delegated to it by laws, it began to assume authority and to request authority until finally it has started to tell the people who

MR. JACKSON

created it what they should do and particularly, in one instance, what they should drink, until it was necessary, in the case of prohibition, to set this creature once more in its proper place.

When we first established this creature government we gave it a certain amount of pocket money and told it to go out and have a good time, but instead of conserving its pocket money it found so many things to do that it got badly in debt and came running home for more money, and, in order not to be disgraced, we, the creator, dug down in our pockets and gave it more money and we have been digging ever since. The money the creators dug up and handed over to this creature called "government" bears the unpopular name of "Taxes."

We have come to the conclusion that it is now about time that the creator (we, the people) once more seized the reins and restrained somewhat this impetuous government creature from the extravagant expenditures it is now making. In other words, this government thing that we have made has grown so large and strong that it now thinks it is bigger than its creator and can dictate to its creator.

However, in going back to learn the source of taxes we find that this tribute that people pay is as old as civilization itself. Back in Bible times the Levites gave tithes of one-tenth, and from our viewpoint in these days I would say that the Levites got off easy. Anyhow, the Levites have always been fairly successful in bringing in the tithes.

You will recall, too, that the Romans put tax collectors in every province to levy tribute.

Furthermore, it is written—"And it came to pass in those days that there went out a decree from Caesar Augustus that all the world should be taxed." I admit that Caesar Augustus was a trifle ambitious, but you will agree with me that he made good and passed the plague down to us.

There is no subject that so universally affects the individual as the subject of taxation. It is with us while we live and it follows us after death—in the shape of Estate taxes. We are all familiar these days with certain Big Estates, where some person had struggled and slaved to lay up treasures on earth and, in the end, the estate was not sufficient to pay the Federal Estate Tax, and nothing was left for the family he hoped to protect. There is no end of things that may be taxed, and hence there is no end of new forms of taxation, and to inflict these on the patient public is one of the chief indoor sports of legislators, state and national.

In order to understand taxes we must study their basic cause. Why are taxes, and why do people who are the creators of government stand for taxation? Why do they not rebel and refuse to pay? Because taxes represent, in the illustration I am using, the cost of this creature we have set up. In other words, taxation is the means of meeting expenses of government.

The basic thing about taxation then is the contracting of the expense. When once this expenditure is made the resultant tax must be met. People complain at times about one form of taxation being more onerous than another.

The money must be raised and it does not make so much difference how it is

raised provided the tax is equitably distributed.

To keep down taxes we must prevent the expenditures being made in the first instance. It is an easy thing to spend money, but it is a difficult thing to repay it.

The Federal Government, itself, and all municipalities have gone through an orgy of spending, not looking ahead as to how the money to meet these expenditures is to be raised. Some of this reckless spending has been brought about by short-sightedness of the taxpayer, and much of it has been brought about by carelessness and inefficiency to satisfy a political system which in many respects has outgrown its usefulness.

Our present civilization demands certain conveniences and improvements that make it necessary to incur expenditures that were not required a quarter of a century or even ten years ago. If we are to develop this civilization and refine it, it will be necessary to incur additional expenditures for this purpose. However, we must plan such additional expenditures along an orderly and sane line and any normal increase in expenditures of this character will be well cared for with the normal growth and development of our communities.

Every individual and every utility and every business enterprise should bend its energies toward the correction of public expenditures, and the prevention of the waste of public moneys. The utilities have been and probably will continue to be the particular prey of the corrupt politician. As these expenditures are the meat upon which the politician thrives, we all must, of necessity, whether we like it or not, interest ourselves in politics and the election of the right sort of legislators.

The States differ in their methods of taxing the real estate and property of utilities and their profits, and in the brief time allotted me I shall not attempt to analyze the different State taxing laws. But I would like to give you a general picture of the mounting taxes in which we are all interested.

One cannot discuss these tax problems without considering the important effect of taxation generally in its relation to every-day business activity. It is estimated that the tax burden of the American people at present amounts to approximately $8,000,000,000 a year, with a per capita tax in 1932 of approximately $64.00, and while not borne directly by business, business is, to say the least, directly or indirectly affected.

Tax collections in the United States are larger than in the United Kingdom, Germany, or France, but the ratio of tax collections to national income is lower.

Tax collections, national and local for 1932, the latest year for which comparative data are available, are as follows: United States, $8 billion; United Kingdom, $4.4 billion; Germany, $2.4 billion; France, $2.3 billion.

From 1929 to 1932 the ratio of taxes to national income rose as follows: United States, from 11.8 per cent to 20.3 per cent; United Kingdom, from 21.4 per cent to 28.0 per cent; Germany, from 18.9 per cent to 21.8 per cent; France, from 22.5 per cent to 25.2 per cent.

On a per capita basis, taxes in the United States are lower than in the United Kingdom, but higher than in Germany or France.

For a large concern, every business day in the year is an assessment or collection day for some taxing jurisdiction, which, in many cases, results in the incurring of expenditures that may be in excess of the tax liability involved in order to comply with the laws.

One trouble with our system of taxation is due to the fact that it is not conducted upon a business-like basis. There is multiple administration, dual subjects of taxation, and wasteful expenditures of public funds, all having a tendency to make the tax burden disproportionate to the existing wealth and income of our citizens. Today, the personal income of an individual is taxed twice in 27 states; in 24 states, a double tax is imposed upon corporate income. Practically all the states and the Federal Government impose death and gasoline taxes. Numerous other taxes are imposed both by the Federal and State Governments until this problem of double taxation is becoming a serious thing. Whether you are connected with utilities or engaged in any other business, you must be involved in this wasteful unbusiness-like method followed in the assessment and collection of taxes. We should not be entirely concerned with the form of taxation so much as the results, so long as the form of taxation provides ample equalization of the burden. I have long since refused to expend my efforts in the direction of seeking changes in forms of taxation except purely for the purpose of equalization. This is not the seat of the trouble, but, as stated before, the greater problem we are facing is securing a reduction in the unwarranted, uneconomical high cost of government, which is oftentimes out of proportion to the benefits received.

Let me call your attention to this important fact, which few people realize. The great part of our Government expenditures has grown out of past wars or due to preparation for future wars.

In 1932—the expenditures were as follows:

Army, Navy and war activities	$764,000,000
Hospitals for the Army, Navy and Veterans	97,000,000
Interest on public debt incurred because of war	599,000,000
Pensions	549,000,000
Military, Naval and Veteran Insurance	126,000,000
Adjusted Service Certificate	194,000,000
Retirement of War Debt	412,000,000
Total	$2,741,000,000

This represents 55 per cent of our Federal expenditures. Just think of it. From the tax standpoint alone, what a blessing would come to us from universal peace.

Utilities, individuals and all industries are alike interested in the Federal income taxes. But utilities are discriminated against in this, that, while they pay the same Federal income taxes as others, and such State taxes as the State law provides, yet the State limits the amount they can make after payment of both the Federal and State taxes. Their earnings are limited, but their taxation unlimited—the most unfair practice shown any business in the country. More than that, if you escape the death penalty from the State Commission, you are still subject to investigation by the Federal Trade Commission for treason.

I can imagine that utility executives, worn out with trying to appease a public that is never satisfied, listening day in and day out to carping criticism, would like oftentimes to give up the ship and go home and stay home to a surcease from this labor of love.

They are like one of our foremen who had never been to a church service. The boys gathered around him one day and said, "Bill, we would like you to come to our church next Sunday. We have a live-wire preacher whom we know you would enjoy." So Bill allowed he would go. He put on his Sunday-go-to-meeting clothes, and they sat him down in a seat close to the pulpit. It happened that this Sunday the "live-wire preacher" had to go away and in his place was one of those supernumeraries who started our firstly, secondly, thirdly, and, after he had harangued away for about an hour, while Bill was getting uneasy and shifting about in his seat, the preacher said, "And now, having discoursed upon the lesser Prophets, let us take up the major Prophets. Now there was Isaiah—what

place shall we give him?" and Bill said, "He can have my place—I'm going home."

Unless there is an abolition of waste and a material reduction in the cost of government, there can be no material relief in the burden of taxation. Your association represents a great and growing business and its members are peculiarly fitted to perform a distinct public service by lending its facilities as frequently as possible to those persons qualified to intelligently express themselves on matters of public importance such as questions of taxation, control of government expenditures, etc. Laws always follow public sentiment—they never precede it. The honest legislator and tax administrator will welcome such an educational program. People are becoming more tax conscious, but there is still much work to be done in bringing matters to the attention of the average business man. Oftentimes, we unjustly criticize the public official and administrator, but if we look to the source of the difficulty, we find that it is due to failure on the part of the citizens to act when the opportunity is afforded. In the county wherein I reside, nearly 80 cents of every tax dollar collected by that county is to pay interest on the public debt, for which the people, themselves, are responsible.

There probably never has been a period in the history of our nation so productive of proposed new tax legislation as the year 1933. Not less than four hundred tax bills have been given consideration in this period. Since Jan. 1, 1933, the Federal Congress has completed a regular session, and has met in special session. The Legislatures of 47 of the 48 States of the Union have met during this year. Mississippi is the only State that was able to avoid a 1933 session. Many of the State Legislatures convened more than once, and in some cases there have been three meetings.

There has not been a single session of either the Federal or State Legislatures wherein the members have not devoted a material part of their time and efforts to considering ways and means of raising revenue for the conduct of governmental affairs. No business has entirely escaped the assumption of more and staggering tax burdens, with the end not yet in sight.

Such a record should impress you with the importance of being watchful to protect your lawful interests against the possibility of having your business made a special target for future tax legislation. We have proof that the urge is present.

During the past ten years, there have been spasmodic attempts to enact, in one form or another, so-called State sales or gross income taxes. Some of these efforts have been successful. In this latest 1933 program of tax legislation, the types of tax mentioned have proved very popular. This is evidenced by the fact that today we have 20 Sales Tax laws on the statute books, two of which have been declared unconstitutional and reenacted. Two such acts, voted upon by the people in referendum, have been defeated.

Ever since the depression started, there has been a constantly diminishing return from the normal sources of taxation, and there has been a race on the part of the State Legislatures and the Federal Congress to explore virgin fields for new sources of revenue.

Much of the recent legislation that has been enacted, especially the sales and gross income tax acts, is for the purpose of temporarily relieving a critical and serious situation. It may not be good policy to attempt to overthrow legislation of such a temporary character, which in most cases, it is claimed, has been enacted merely to assist in tiding over the discouraging condition of our public finances, and relieving certain classes of taxpayers who can no longer carry their impossible tax burdens. In these disturbed times, there may not be a sufficient amount involved to justify the bringing of this question to an issue in the courts, where a decision, even though favorable, may result in pointing out methods that States may attempt to employ, even worse than these. I can understand how a strictly private concern endeavors to make its profit without giving first consideration to the welfare of the public, but this is not possible with a public regulated industry like the utilities. Speaking only as an average individual, I feel there is probably no industry organized for profit in our entire domestic economic structure that is giving so much to the public for what it pays as the utilities, and I submit that this should be well considered by the States in placing a tax upon its revenues.

Please do not be misled by these views that I am not familiar with and thoroughly sympathetic with the difficulties encountered by those responsible for the honest administration of our public affairs. You cannot blame the legislator and tax administrator entirely for this tax situation. The expenditure of public funds cannot be controlled unless there is created a real desire on the part of the citizens for such control. The rendering of assistance where you can do so through your facilities in educating and making the public conscious of its responsibility in tax matters is a thought which I leave with you, and commend for your careful consideration.

Lest I leave you in too gloomy a mood, let me give you this picture, from the *National Tax Magazine*, as to why taxes are not so bad.

". . . there is always a chance with taxes—two chances in fact; you are either taxed or you are not taxed, and if you are not taxed you are all right, but if you are taxed you still have two chances, you are either taxed too much or too little; if you are taxed too little you are all right, but if you are taxed too much, why, then you still have two chances, because you can either get your tax reduced or you don't get it reduced. If you get it reduced you are all right, but if you do not get it reduced you still have two chances, because you can either pay it or not pay it; if you pay it, it is all right; if you don't pay it you still have two chances, because you then can be sold out or not sold out. If you are not sold out, it is all right, and if you are sold out you have two chances, because you can either redeem your property or not redeem it. Of course, if you redeem your property you are all right, but if you do not redeem it you are just as well off as you were before, because then, you see, you have lost your property and you haven't any taxes to pay, and you come back to the first position where you are not taxed at all. So you see, that in the end taxes are not so bad."

I would like to leave you just one other thought. While I have pointed out that the expenditures of the present Administration will greatly increase our taxes, I believe, however, whether we like it or not, a new era has dawned upon us. We Americans up to the time of the depression were proud of our civilization. We boasted of our wonderful cities, our sky-scraping buildings, our transcontinental railroads, our large manufacturing industries and our varied achievements. The age teemed with business—money was its slogan. The talk of the mart and of the palace was of stocks and bonds, profit and income. "Big business," so called, was supreme. We failed to realize that the material things upon which we built are ephemeral and fade as the day dies out of the sky.

(Continued on page 219)

DEALER COORDINATION AS AN AID IN LOAD BUILDING

By JAMES E. DAVIDSON
President, Nebraska Power Company

Address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 6th, 1934.

I have appeared many times before you as an emissary of some particular phase of our industry. May I assure you that I have had no greater satisfaction than this opportunity of speaking to you on the very important subject of Dealer Coordination as an Aid to Load Building?

To my way of thinking, this is a one-sided discussion. For the building of future domestic load on a large scale, there lies only one path—and that is an active merchandising program on the part of our electric companies, plus a coordinated, broad-visioned, constructive program of dealer cooperation.

The utility company and the dealer must go hand in hand, reaping not only greater profit to both, but also giving greater service to the customer.

True, there have been power company executives that have deemed it wise to step out of the merchandising business as merchants and depend solely on their dealers for merchandise sales, aided by active sales promotion on the part of their companies. I cannot endorse this viewpoint. I am still old-fashioned enough to believe that power and light companies can, and should, carry on their own merchandising programs, and at the same time coordinate their advertising and selling in order to be of utmost assistance to their fellow dealers.

Cooperation and coordinated advertising and selling in American industry are not new. We have merely been lagging somewhat in this progressive business procession. Florists, cement manufacturers, orange growers, and 30 other industries saw the light of truth many years ago—that the real competitors for business were not those of their own industry, but of other industries, all fighting for their share of the consumer's dollar.

The florists coordinated their selling and advertising activities in order to outsell candy as birthday and anniversary gifts. "Say It With Flowers" has become a household expression.

The cement manufacturers joined together many years ago in convincing the people of the nation that concrete for paving is better than brick and other forms of hard-surfaced roads.

MR. DAVIDSON

The orange growers forgot competition among themselves. They have cooperated in their selling activities and coordinated their advertising in order to make America orange-conscious, so as to outsell grapefruit, oatmeal, and other breakfast dishes.

That's exactly what we must do! The electric company and the electrical dealer are not in competition with each other. They are working toward a common end—in competition with automobile salesmen, clothiers, and everyone else who is working . . . yes, fighting for his part of the consumer's dollar.

Especially is this true of our industry because our selling of merchandise is only a means to an end:

First, that of making electricity a greater servant in the home, thereby eliminating drudgery and making the home a more comfortable and finer place in which to live;

And, second, that of creating greater kwhr consumption, thus adding new revenue to our lines and fulfilling our obligation to the millions of men, women and children who have entrusted us with their savings.

Why shouldn't we, then, do everything to carry on and carry out a broad-visioned dealer coordination program?

I hope that I am qualified to speak on this subject, in view of my long experience, not only in the commercial side of our business but also as a pioneer in intensifying dealer cooperation and coordination in advertising and selling electrical appliances.

It has been my contention for many years, and I still persist in that same viewpoint, that our dealers of electrical appliances hold as important a position in our general plan of building greater load as the merchandise departments of our electric companies.

It was in 1927 that the question of better trade relations first came before a utility association group as a live issue. As chairman at that time of the old N.E.L.A. Commercial Section, I enthusiastically supported trade conferences that had been arranged in an attempt to establish a better understanding and a closer cooperation among our power companies and other dealers.

It was at this 1927 general session that I humbly stated my views as follows:

"Our aim in merchandising is to place electrical appliances in the hands of our customers, and have them used. This is necessary because a kilowatt-hour goes for naught unless utilized. Merchants within and without our industry, who handle good electrical merchandise, can aid us materially in rendering more complete service in the home. Therefore, it behooves every company to improve its trade relations. These other merchants are doing for us what we are trying to do for our customers and ourselves. I believe you should endeavor to interest your merchants handling electrical goods in our coordinated advertising program, and cooperate with them by regularly informing them of your merchandise sales plans. We have made the gesture to these competing merchants. Now it is up to us to show them that we are serious in our interest."

This question of trade practices and trade relations arose, not because power and light companies were envious of other dealers; not because they were unwilling to build load through dealer coordination, but because of the variation in viewpoint among utility men themselves, not to mention the dealers.

It was not a question of rivalry or competition; it was merely a difference of opinion as to the best approach to the

Testimonal to Notable Service

As a testimonial of his notable service as Chairman of the Electric Refrigeration Bureau, a hand-wrought, illuminated globe made of cathedral glass was presented to Mr. Davidson during the Convention. On behalf of the Institute and of the donors, President Cortelyou said:

". . . Jim Davidson has been a persistent and vigorous supporter of commercial activity. He has not stood on the side lines. He has been an aggressive leader in action. . . . The record of increased sales of electric refrigerators during the years of economic adversity is an achievement in itself, but Mr. Davidson's contribution of time, enthusiasm and friendly leadership have helped to record greater results that are written in the phenomenal sales of this one service because the idea of local cooperative effort among all dealer outlets in our marketing efforts, has been broadly advanced.

". . . It is with a large measure of gratification that as President of the Edison Electric Institute, I take this opportunity to publicly thank Mr. Davidson on behalf of the executive officers of the Institute for his able and willing assistance.

"I have . . . the high privilege of presenting to you on behalf of the Electric Refrigerator Manufacturers Group of the Bureau, this artistically wrought masterpiece as a permanent token of their respect and gratitude for your service. This illuminated globe of cathedral glass represents the painstaking labor of one individual over the period of one year. May it long remain in your possession as a reminder of the friendship of your associates."

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common objective—a greater electrification of the home.

This was a natural condition, and although at certain times and in certain places there were some serious differences, as a better understanding developed it became merely a question of ironing out these difficulties, which ultimately proved to be of a minor nature.

There was only one real obstacle that arose, and that was unfortunate—the throwing of electrical merchandising into the political arena. However, this was more irritating than serious. In passing, it is interesting to note that in only two states did anti-utility merchandising legislation actually have the backing of some leading merchants.

However, this question is behind us with a legal decision from one of the higher courts, that declared: "The service of the electric utility to its consumers of current should not stop at the end of a copper wire."

With this legal opinion from the court, the electric power and light industry took on a responsibility that we cannot shirk or shift. It demands from us not only a greater selling activity on our own part, but a greater appreciation of the necessity of cooperating with other dealers and establishing a well-organized, coordinated selling and advertising activity that will accomplish exactly what the court pointed out—"that our service does not terminate at the end of a copper wire."

Every time we turn the leaf of a calendar, new labor-saving and home-comfort appliances make their debut—new electrical items that dealers cannot afford to merchandise until a steady demand is created.

Who shall pioneer these new appliances? Who shall introduce these new servants to the home-makers of America? The court gave the answer when it said that our service to our customers goes beyond the end of a copper wire. If this were not true, a great portion of the labor-saving, drudgery-removing, home-comfort appliances in common use today would still be merely novelties or luxuries for the few well-to-do. It was the time, energy and money spent by our industry and also by the manufacturers in pioneering these products that developed the volume and the resultant lower purchasing price, enabling the American home to take full advantage of these humanitarian servants.

Most assuredly we might continue to do a solo pioneering job. But we can do a better service job for our customers and a more efficient merchandising job for our companies by cooperating more effectively with our dealers through demonstrations, home service and coordinated selling and advertising programs. This is not just theory, for past experiences, few as they have been since 1927, speak for themselves as to what can be accomplished by cooperation and coordinated advertising and selling. These activities during the past seven years developed better dealers and made us better merchants. But this spirit of cooperation went beyond that. It induced furniture stores, musical instrument establishments and department stores to take on established lines of high-grade electrical merchandise. I know of one large department store that recently inaugurated a large electrical appliance department because of the cooperative interest and stimulation on the part of the power and light company in that particular community. Daily in many ways that department store is adding dollars of increased new load to the lines of that electric company. Who can venture to say that they are not partners of the electric light and power company in building greater load?

I know of a piano store whose owners have done a splendid merchandising job in their line for 40 years. Because of their conservative business policy, they hesitated in taking on a line of electric refrigerators. However, the cooperative activities of the power company in the local electric refrigeration bureau attracted the attention of this piano house. One of its executives noted with interest the close cooperation in the selling of this major electrical appliance that was taking away piano sales from his establishment.

Stimulated by the interest of the power

company, this piano establishment took on an electric refrigeration line. They sold 227 electric refrigerators in one month. During the year they expect to sell 1500 . . . which would mean approximately $30,000 in new revenue from this one source for the local electric utility. The piano company has enjoyed such great success in selling electric refrigerators that it has moved its pianos to the second floor and is taking on a complete line of electrical appliances, including electric ranges and water heaters. In charge of its sales department is not a star piano salesman, but an efficient former central station merchandise manager.

I am positive that if the local power and light company had not done such a good cooperative job; if it had not carried out a fine coordinated program of selling and advertising, these piano merchants would still be competing with us for their share of the consumer's dollars by selling pianos instead of selling electric refrigerators, ranges, and water heaters.

When they were selling pianos they were truly our competitors. Today they are our partners! And, as good partners, we must not only adopt sales policies founded on fair trade practices, but we must go way beyond that to the point where we actually help our partners sell. As long as the merchandising department of the utility company looks upon the dealer as a competitor, or is so considered by the dealer, there can be no common ground—no genuine coordination of selling effort.

Not only must we aid these dealer-partners of ours in selling electrical appliances, but in order to make them efficient in merchandising we must carry our educational policy one step farther. We must generally acquaint them with our electric service story, just as we do our own employees.

They should understand our rate structure; they should be able to tell their customers how much electricity will do for so little compensation. Nor would it be stepping beyond the line to acquaint them with some of our apparent engineering and public relation problems.

Dealers should not have a too complicated perspective of our business, but surely they would be more effective salesmen for themselves and for us if they understood our business better. They cannot escape the fact that when they sell electrical appliances, they sell more than steel, wood and wire. They are selling a service, and they should have a general understanding of that service and its problems.

Since March of 1933 there have been many so-called "new deals." With enthusiastic dealer-cooperation evolving into a coordinated advertising and selling campaign, there is now a "new deal" in electrical merchandising.

Today the wise president of a power company, in reading the balance sheet of his merchandise department, considers that statement only as a part of the sales record. It is, and should be, just a small part of the complete record of electrical merchandise sales—and results in load building. To the total sales sum of the merchandise department of the utility company should be added the aggregate sales of every dealer of electrical appliances in the cities and towns served by that particular power and light company. That composite result tells the real sales story, because the merchandise sold by dealers uses kwhr of electricity, too.

Every dealer of electrical appliances in the communities you serve must be considered a partner in your load-building activities. He deserves the attention and the support that you give to your new business department, your merchandise department and your other activities for the purpose of creating greater kwhr consumption, because the aim and interest of the dealer is practically parallel with the purpose and interest of the utility companies.

By lending a hand to our dealer-partners in aiding them to sell, I am referring to tangible methods of helpfulness that bring the dealer and the electric company into genuine cooperative action.

We must never overlook the fact that each sale of an electrical appliance by a dealer represents a cash value to the central station in new kwhr. The more good dealers that are developed, the stronger that valuable force becomes. We must not overlook the fact, also, that these dealers, especially the larger ones, maintain experienced sales forces, have good downtown locations and displays, and spend considerable money for advertising. We capitalize on all of this when we make these dealers our partners.

With intelligent guidance and mutual confidence, we can all travel the common road together to our common goal —greater electrification of the home.

Sales Committee of the Institute at a Luncheon Meeting During the Convention

All agree that haphazard selling belongs to yesterday. Cooperation alone will not establish new sales records. Once the cooperative relationship is established, an intensive coordinated advertising and selling program is essential if our industry is to establish sales records commensurate with the need and size of the industry. This is necessary if we are to hold our own against the constantly more intelligent and more efficient sales competition of other items and other household goods. Again I say that haphazard selling belongs to yesterday.

I, for one, haven't forgotten our attempt at coordinated selling and advertising inaugurated some years ago by the N.E.L.A. Commercial Section. That was an attempt to synchronize the entire advertising and sales promotion of manufacturer, distributor, dealer and utility company. We had no appropriation to work on, but we did have the splendid cooperation of the industry, and especially the encouragement and the stimulation of the manufacturers. This resulted in a unified effort to present one appliance each month in a planned schedule for the period of a year.

One fact remains in my mind in regard to that activity—the sales record on small heating, motor-driven devices established during the time this program was in force has not been equaled, before or since. This test of coordinated advertising and selling between the dealers, utilities and manufacturers, plainly pointed out to me that such organized effort produced increased sales.

Let me summarize for you the remarkable record of the Electric Refrigeration Bureau cooperative activity which it was my privilege to direct for three years. There is no need to go into detail, because the record of sales of electric refrigerators during this cooperative and coordinated activity is the best evidence that I can present. More than three million electric refrigerators have already been sold, and each dealer has shared in the harvest that has come from a public which could not resist such a barrage of sales promotion and coordinated selling and advertising. The power companies, as a result, have added approximately $65,000,000 in new annual revenue to their lines.

One manufacturer wrote me: "The Electric Refrigeration Bureau activity can be used as a good example not only of the finest trade relations, but of the stimulation of an industry to the greatest specialty sales job thus far experienced in the history of American business."

Such programs as the Electric Refrigeration Bureau, the Home Lighting activity, the Better Light-Better Sight program, the Electric Table Cookery program, and the recently announced Rural Development to Promote Electric Water Systems, have created, and are creating, greater kwhr consumption for our companies. At the same time they have brought about a closer spirit of cooperation and a better understanding on the part of our dealers, and are building on a more tremendous scale than ever before in the history of our industry a greater residential kwhr consumption.

And the very fact that we have carried on these cooperative activities during the past seven years furnishes us the basis for launching the most comprehensive load building program in our history. The vehicle that I suggest for the carrying on of such a program is complete electrification, from porch lighting to proper interior home illumination, electric washing, ironing, toasting, timepieces, sewing, food mixers, etc., etc. Every electrical dealer would be deeply interested in such a nation-wide activity because complete home electrification, if carried out on such a broad scale, would stimulate tremendously the sale of major devices, such as electric ranges, water heaters, even refrigerators, ventilator and furnace fans, as well as our new business brightspot—home air conditioning. Not only would all dealers be interested in such an activity but so would the various trades selling wiring fixtures, kitchen equipment, furniture and so on.

All these sales outlets can be added readily as our partners, capitalizing an unusual opportunity for the sale of wares, wires and kilowatts.

A complete home electrification activity can be presented in such an inviting way that it would be the most colorful and dramatic plan ever promulgated by our industry. It would combine labor saving, convenience, beauty, health and economy into such a combined force that it would have a strong appeal to every breadwinner and homekeeper in America.

Over a period of three and a half years there have been developed more than five hundred local electric refrigeration bureaus under able direction, disciplined in mass advertising and selling, ready to do another big job. They can and, in my opinion, would enthusiastically support a nation-wide home electrification program, if such an activity carried with it a complete nationally coordinated selling and advertising program, definitely planned and forcefully carried out.

The time is opportune for the utilities, the manufacturers, the dealers, and the trades to join together in this, the greatest of all selling opportunities in the history of the electrical business.

With our files filled with actual case histories of successful coordinated selling where the whole industry has joined hands, why shouldn't we point toward this method of creating greater kilowatthour consumption? I am confident that such cooperation and coordination will not be lacking, and I look forward to a renaissance of our industry under leaders who will see in coordinated sales effort, nationally and locally, the path which will bring to us all—manufacturer, dealer and utility company—greater prosperity, and to the American public, greater comfort, less drudgery, and more time for the building of a better home environment.

We Shall Go Forward

(Continued from page 186)

truth—the facts—so marshalled as to be beyond challenge, of the contribution this fifty year old industry has made and is today making to the progress and development of American business and American life. Justice to the industry demands this and justice to the people who are today bewildered by irresponsible clamor and misled by false and deceiving propaganda.

Whatever the obstacles in our path—and they are indeed serious—we shall go forward with resolute determination to make the industry as great in leadership as it is in technical strength, to protect and defend its legal and constitutional rights against unjust aggression, to promote the widest possible use of its service at the least possible cost to every class of consumer, doing our work as well as we know how, striving always for improvement. The outcome we leave to the native good sense and fairness of the American people.

THE SECOND DECADE OF RURAL ELECTRIFICATION

Building on a Good Foundation

By P. H. POWERS

Vice-President, West Penn Power Company, Pittsburgh, Pa.

Address before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 5th, 1934

As the subject of this paper indicates, it is our purpose, during the period allotted to us on this program, to examine several phases of rural electrification. That this subject should merit discussion on this occasion evidences its importance in the eyes of our industry.

Let us then take a quick look at what has been accomplished, weigh the task that confronts us—its magnitude and importance—and consider a specific plan of action.

There is no point in debating the advantages of electric service. They are as well recognized in the country as in the city. Those once enjoying this service are never content without it, nor can they imagine doing without it again. There is no lack of demand. The question, therefore, is not whether it should be supplied, but how this can be done expeditiously, economically, and energetically.

The Job That Has Been Done

Our industry has long been cognizant of its opportunity and has energetically faced the problems encountered in extending service into rural areas. A firm foundation for future rural electric development has been laid with unusual foresight and thoroughness. Transmission lines extend from generating stations to substations in practically every city, town, and village of over 1,000 population in the United States. From these substations our rural lines radiate. Thus, from a power standpoint, the situation is prepared for the decentralization of industry in whatever direction social or economic influences may lead. We have pioneered the way. The fetters of limited power supply are broken. If society wishes it may spread out and take its industries away from congested centers. The city can move to the country without becoming a farmer. We have been and will continue to be in the vanguard of any industrial decentralization.

Through the mellowing school of experience, there have been developed across this country, forms of rates and extension policies especially adapted to

MR. POWERS

the varying rural conditions which exist. It is fortunate there are variations, that many methods have been tried. It is from this wealth of experience that flexible rate forms and extension plans have evolved to meet different conditions and have produced an economic stability which has weathered a severe test. Of course, there will be improvements, but future changes will be dictated by experience and by economic considerations.

Under these rates and extension policies, between 300,000 and 350,000 miles of distribution lines have been built. This represents an investment of approximately a half-billion dollars. This is eight times the direct appropriation for the T.V.A., three times as much as the estimated cost of Boulder Dam, and almost as much as it cost to build the Panama Canal. When you add just about an equal amount estimated to have been spent by the customer in wiring and appliances, this rural electrification business will closely approach a billion dollar industry.

These rural lines serve about two and one-quarter million customers, of which a third are farmers. In 1923, 177,000, or less than 3 per cent of all farms used our service. By the end of 1933, this had increased to over 710,000 or 11 1/3 per cent of all the farms in the nation. In no year has there been a decrease. A splendid review of this development can be found in a ten-year report issued by the former National Electric Light Association. (N.E.L.A. Report No. 237.)

Coupled with this extension of lines into the country and the connection of two and one-quarter million rural customers, there has been an organized program for the extension of facilities and development of uses for rural electric service. In addition to the advancement of this service under the guidance of the Rural Service Committee of N.E.L.A., new uses have been developed by the Committee on the Relation of Electricity to Agriculture. State committees ferreted out possible uses of rural electricity, investigations were undertaken, and experiments conducted. Gratifying results were obtained and this experimentation was not at the expense of the farmers nor the taxpayers. Never has a program for rural development gone to the country better fortified with facts and information.

Already 227 rural uses for electricity have been listed. Specific information relating to over 100 of these uses has been collected, digested, summarized, and published in a rural electrification reference book. (Electricity on the Farm—C.R.E.A. bulletin.) From various sources, there have emanated over 350 pamphlets, bulletins, and circulars relating to this subject. We have indeed a remarkable literature on rural electrification.

To make this information available to our rural customers, our companies have employed enthusiastic specialists who ably and willingly inform prospective users how they can most economically, profitably, and satisfactorily employ the services of electricity.

When it is remembered that this has taken place during what authorities describe as a ten-year agricultural depres-

sion, the progress made is little less than astounding. Every year has witnessed an increase in the number of rural customers. Every year, until 1933, there has been an increase in total energy used by these rural customers. There could be no more convincing testimony of the need and desire for electric service on the part of rural residents nor the soundness of the plan upon which it has been developed by our industry. It has not been high-pressured; the rural customer has not been exploited nor oversold; advances have been tempered by economic considerations while neither hysteria nor politics have been permitted to rule; the foundation of the past decade has been anchored to a scientific development and a thorough experience.

Extent of the Job Ahead of Us

Having pointed with pride to the results and accomplishments of the past decade, I now submit that building lines and writing pamphlets is not rural electrification. Rural electrification means electricity—lots of it—at work for the social and economic advantage of rural people. The economic stability of our industry will be enhanced in just the proportion we are able to wisely evaluate and put into use those applications which contribute most to the advancement of rural well-being. The real job of rural electrification still remains to be done. It is tremendous, but it can be done. On the firm foundation that has been laid, we intend to build a superstructure that will make the rural home as modern as any city home and will offer rural industries just as abundant, reliable and cheap electricity as can be obtained on a sound economic basis in any similar territory. This will be our contribution to the task of bringing rural life back into its own.

Approximately one-third of our population is rural, from the standpoint of electric service. In arriving at this figure, we must define "rural" as all users or prospective users of electric service outside of incorporated communities. When it is remembered that our rural lines serve all comers—farmers, non-farming residents, small industries, stores, commercial institutions, churches, and schools, and that our costs of service cover all these customers, we realize that we are not only interested in farm service, but in all services in these rural areas. When we take into further account the fact that only one-third of our rural customers are farmers, we must mould our selling program on a broader scale than heretofore, if we are to reach the full possibilities of our market.

This one-third of our population, living in rural areas, is just as interested in the social and economic advantages which flow with our service as any other group of our people. Perhaps more interested,, because such a large percentage are without its advantages. Among them are those who have previously known these advantages and are particularly dissatisfied without them. It was reported from Washington, D. C., that the back-to-the-land movement has boosted the farm population by more than a million as of Jan. 1, 1933. This is the largest increase during any year since 1920. The voice of this million will be heard, demanding the advantages they have come to accept as necessities.

The rural home needs every convenience demanded by the urban home. It is not excessively visionary to expect to reach an average use by rural residences of 5,000 kwhr per year, and much sooner than the same average levels will be realized among our urban customers. There are approximately 200,000 farms on which water is pumped today for some form of irrigation. We can look forward to an additional 300,000 of our farms using irrigation to a greater or lesser degree. In California, of course, irrigation is well established. The average annual farm use there is between 14,000 and 15,000 kwhr. We have similar examples in the rice fields of Louisiana and Arkansas. Small scale irrigation is now moving eastward at a rapid rate. Intensive cultivation of truck gardens, orchards, and even pastures, is bringing this about. A great potential use of our power is represented by these additional farmers of which over half are genuine prospects.

A most successful new use that has hardly been well started is for heating soil in hotbeds and sterilizing soil for similar uses. It has been estimated that the potential energy use from this application alone is over four billion kwhr per year. Another large potential market is represented by milk-cooling. Authorities generally agree that the whole milk sold in our urban centers should be refrigerated at the point of production—on the farm. This market has only been one-fourth sold and is ripe for expansion.

We have no measure nor statistics with which to make even an intelligent estimate of the annual energy consumption of rural commercial business. However, it is considerable and should increase as rapidly as the corresponding urban uses.

Many more successful uses could be elaborated upon, but the market among present customers is so great that it scarcely permits of definition. All of these uses produce great social and economic advantages to the customer. The only limitations are the customer's ability to pay for what he is convinced he can use to his advantage, and our willingness to use methods now at our disposal for convincing the customer what he *can* use.

The cream of the market for new customers has been covered, and economic limitations become more severe as we attempt to extend further into virgin territory. In many sections, the operating companies of our industry feel, and rightfully so, that the annual revenue derived from rural lines is too low to cover operating costs, and yield a reasonable return on the investment. This is the result of low average energy use.

Since electric service has been developed in the United States on the theory of the customer meeting the costs of service, we see no valid reason for making an exception in the case of rural service. Increased use of electricity on the part of rural customers must be our primary objective.

In entering a new field—courage, vision, and imagination are essential, or failure is inevitable. However, these most admirable qualities, in their proper places, need to be tempered by reality. If a movement as vast and far-reaching as the further extension of electric service to rural America is to be kept right side up and moving forward, then, logically, the difficulties must be squarely faced and keenly analyzed. It cannot be accomplished by waving a magic wand. If previous history can be taken as a guide and, properly interpreted, it is as good as any, we will recognize that the first ten years of any new movement are always filled with hesitation, confusion, doubts, and hopes. Compared with experience in other fields with which we are familiar, our ten years of rural development have brought results of which we are justly proud. The rural resident has experienced the benefits of electric service. He wants more. His neighbor, without it, is impatiently awaiting his opportunity.

Proposed Plan of Action

A presentation of the accomplishments of our industry in electrifying rural America, and of the challenge presented by today's opportunities, would be incomplete without a specific recommendation for action. There are five fundamentals which should be kept in

mind in considering the immediate approach to this market.

First, without losing sight of the importance of connecting new customers, let us confine our attention for the present to existing customers. If we can build up their use and make them more satisfied with our service, we will make the task of building future extensions much easier. It goes without saying that we must have reasonably low and promotional type rates to offer these customers.

Second, we must bear in mind the need for customer education in the uses and values of our services. Let me illustrate. There is the case of the Farmer Brown who turns off his electric clock every night and makes a five-cent phone call every morning to get the correct time for starting it again. Then there is Farmer Jones who denies his wife the use of her washing machine, but permits her to dry the clothes indoors with radiant heaters on rainy days. These are true stories. There are the many guaranteed minimum customers who never use up their minimums and others who drop their use as soon as the minimum terms expire. There are the many who demand service and willingly contract under your rates and guarantees only to become high rate complainants soon after service is established. Yes,—there is an endless educational job before us.

Third, is the need for dealer cooperation if we expect to sell our rural market. This requires the full support of manufacturers and jobbers. Brown and Jones go to town on Saturday night. As between your store and that of the pump dealer or the electric dealer or the hardware dealer, your chances are slim of being visited by them. It is also likely they are more personally acquainted with other dealers than with you. Doesn't it seem logical, therefore, that only minor opportunities are offered you for the sale of electrical equipment for rural uses. Doesn't it follow that your greatest opportunity lies in aiding other dealers in intelligently promoting and selling electrical equipment and their uses. House to house selling is frequently unprofitable in rural areas, so why not make the best of the opportunity when the country comes to town. Dealer cooporation of this kind has already been successfully tried by a number of our large companies. In adopting any plan of dealer cooperation, we must assume the responsibility of increasing the aggressiveness of our dealers as well as coordinating their activities.

Fourth, we should progress from a consideration of the farm market to a consideration of the rural market. When we remember there are twice as many non-farming rural customers as farming, perhaps this market will look much more attractive to us. By the same token, we must not let the agricultural viewpoint predominate in our consideration of rural load building methods.

Fifth, we should consider the customer's point of view. In the past, we have concentrated our rural sales effort on the heavy load builders. This is a natural extension of our urban sales effort rather than the use of sales programs specifically designed for the rural market. I believe we need a new approach to rural sales and should press the sale of our services in the order of their value to the customer rather than their value to us. For example, why should we attempt to sell an electric range in a home that doesn't have running water.

The Running Water Activity

With these considerations in mind, I propose a simple and inexpensive procedure which can be made to more rapidly advance the satisfactory use of electricity in rural areas than any single effort we might attempt.

Your rural sales committee reviewed the national market for uses of electric service in rural areas and the progress already made as reported in N.E.L.A. Report No. 167. It finds different applications in varying demand all through the United States. It could catalog these uses and urge their promotion by all member companies. But that is being done anyway by individual utilities. So, we have decided to select one universal application and concentrate on its promotion. To tackle one job and do it well. This universal application, understood and desired by our rural customers in every part of the nation, is simply—*Running Water.* It needs no explanation to the prospect nor any extensive technical research. Good equipment is available and good distribution is established. There are over a million prospects representing both the farm and non-farming rural customers.

Pumping domestic water supply may seem to represent a small electric revenue compared to the greater load-building applications. This is true when you take the narrow view and think of the direct revenue only. The same idea was held about the electric washing machine which we credited with 25 kwhr per year. However, we have found by comparing the consumption of similar homes with and without washing machines, that those having washing machines use on the average 125 kwhr more than those without washing machines. The addition of running water is a major advance in the owner's standard of living. It carries with it a greater satisfaction and appreciation of electric service. Higher living standards presuppose more uses of electricity, and certainly accelerate the acquisition of more labor-saving devices and more adequate lighting. Therefore, the addition of a domestic water system should be credited with many times its own direct revenue production.

A simple plan has been developed for the promotion of electric water systems. I'll not go into all the details now. A printed outline has been prepared for that purpose. I'll just high-spot it for you.

We found the manufacturers of domestic water systems well organized in an association of their own. Our rural sales committee has combined with them in the formation of an Electric Water Systems Council. This council has planned a cooperative sales activity. It has just one objective—to double the rate of sales of electrically-operated water systems within 15 months. The present rate of sales is 50,000 units per year. I would like to have time to describe to you the enthusiasm of the pump manufacturers for this opportunity to cooperate with us. You'll just have to take my word for it.

A slogan and seal have been adopted by the council. The slogan is "Running Water —Your Family Deserves It." A single, inexpensive, promotional broadside has been prepared, which you are expected to mail or deliver to every one of your customers not now enjoying running water. The manufacturers will supply their dealers with the same broadside—on which space will be provided for reference to the manufacturer's specific product. Dealers may use these to supplement your mailings.

You will be asked to take the leadership in holding meetings with the cooperating dealers in each of your sales areas or districts. You will receive a notice from Edison Electric Institute general office and a copy of the recommended plan. It will be suggested that you inform your field representatives promptly. This is necessary because the manufacturers are going to send this plan to their dealers in your territory. Your local dealers will be told to urge you to call meetings for the purpose of laying local plans. Unpreparedness on your part may prove embarrassing to you and to the industry. You may say you are being put on the spot—well, you are.

This is a great opportunity to build or enlarge on dealer cooperation—you cannot afford to muff it. It has proved successful with many individual utilities. This running water activity offers us an opportunity to try it on a national scale. We believe it will work and will be the forerunner to many more similar efforts.

You can see in this plan the adoption of some of the successful features of the Better Light—Better Sight activity. There is no highly organized or expensive procedure. It will cost very little to circularize your prospects. You can go as much further as you like, but at least hold dealer meetings and do something during August and September to promote running water.

Conclusion

During the past decade, the utilities have done a real job in the extension and development of electric service in rural areas. A better job than they have been credited with, or claimed credit for. They will keep it up. A great foundation has been laid and the opportunity for real building of this business is here now. A huge market presents itself. Cooperative selling is the key to this market. The successful selling of this market will be a boon to industry, to trade, to the utilities, and particularly to our rural customers.

The electrical industry has done much to make the urban shopping center and the rural market area a single unified community. With electric lines completely ignoring city limits, the country dwellers for miles around have come not only to enjoy the same comfort-giving and labor-saving appliances as the townspeople, but, by their use of them and of lighting, they have come to think as the townspeople think. The electric lines are the outward signs of this enlarged community spirit. They have done much to break down the sense of inferiority which many a stout lad from the country was never able to overcome throughout his life. He no longer needs to seek the city in order to advance his standard of living. The social implications of electricity on the farm are dramatically convincing evidence of our national well-being to which this utility industry has so largely contributed.

APRIL SALES OF ELECTRIC REFRIGERATORS BROKE ALL RECORDS FOR A SINGLE MONTH

Total of 266,264 Units Boosts Four-Months' Total to More Than Half-Million — Record Number of Dealer Meetings Held This Year

With the amazing total of 266,264 units, the April sales of household electric refrigerators in the United States set a new all-time record for a single month.

The nearest approach to this high-water mark was recorded in June, 1933, when 213,420 units were sold, while the previous April record was 156,248, set in 1931.

The April total compares with 151,668 sold in the preceding month and 127,917 in April, 1933, and brings the total for the first four months of the year to 535,583 units. This is almost two and one-fourth times as many as were sold in the corresponding period last year, when the four-months' total was 240,560, and represents 147.2 per cent of the Electric Refrigeration Bureau's national quota for the period.

With the half-way sales mark already passed, and with eight months still to go, not only is it a certainty that the Bureau's million unit quota for the year will be realized but it is quite possible that the most optimistic predictions of some of the manufacturers will be fulfilled.

A glance at the accompanying tabulation shows that only two States failed to reach their four-months' quotas, while no fewer than 17 more than doubled the figures set for them. Far out ahead in the percentage column is Georgia, with a realization of 307.2 per cent. South Carolina moved into second place with 289.8 per cent, followed closely by Tennessee with 281.9 per cent. Others to pass the 200 per cent mark are North Carolina, West Virginia, Alabama, Virginia, Texas, Missouri, Maryland, New Mexico, Kentucky, Oregon, Oklahoma, Nebraska, Nevada and Arkansas.

A few States slipped back in their race against quota, but in each case the ground lost was almost negligible. However, it is gratifying to note that California and Wisconsin, which in March nosed ahead of their quotas for the first time, are still on the right side of par, while Oregon, which crossed the line for the first time in February of this year,

(Continued on page 224)

ELECTRIC REFRIGERATION BUREAU
SALES—HOUSEHOLD MODELS ONLY—FOUR MONTHS 1934

	YEAR'S QUOTA	FOUR MONTHS' QUOTA—36%	ESTIMATED TOTAL SALES	% QUOTA REALIZATION
New England Division				
Connecticut	19,243	6,927	7,085	102.2
Maine	7,899	2,844	2,853	100.3
Massachusetts	49,224	17,721	22,150	124.9
New Hampshire	5,095	1,834	1,666	90.8
Rhode Island	8,074	2,907	3,264	112.2
Vermont	3,305	1,190	982	82.5
Eastern Division				
Delaware	2,054	739	1,328	179.7
Maryland & D. C.	20,319	7,315	15,762	215.4
New Jersey	49,202	17,713	21,636	122.1
New York	154,788	55,724	64,954	116.5
Pennsylvania	86,678	31,204	47,873	153.4
East Central Division				
Kentucky	11,293	4,065	8,673	213.3
Ohio	64,710	23,296	38,255	164.2
West Virginia	7,970	2,869	7,425	258.8
Middle West Division				
Iowa	19,012	6,844	9,068	132.4
Kansas	14,127	5,086	9,111	179.1
Missouri	27,824	10,017	21,789	217.5
Nebraska	9,783	3,522	7,223	205.0
Pacific Coast Division				
Arizona	2,916	1,050	1,659	158.0
California	78,695	28,330	28,445	100.4
Nevada	714	257	519	201.9
North West Division				
Idaho	3,303	1,189	2,133	179.3
Montana	3,550	1,278	1,802	141.0
Oregon	10,010	3,604	7,681	213.1
Utah	4,863	1,751	2,896	165.3
Washington	18,025	6,489	8,396	129.3
South Eastern Division				
Alabama	7,187	2,587	6,611	255.5
Florida	9,790	3,524	4,446	126.1
Georgia	8,309	2,991	9,189	307.2
North Carolina	10,945	3,940	10,630	269.7
South Carolina	4,358	1,569	4,547	289.8
Tennessee	9,783	3,522	9,932	281.9
Virginia	11,031	3,971	9,503	239.3
Great Lakes Division				
Illinois	77,150	27,774	35,470	127.7
Indiana	28,271	10,178	14,151	139.0
Michigan	44,387	15,979	20,746	129.8
Wisconsin	26,180	9,425	9,501	100.8
North Central Division				
Minnesota	19,794	7,126	7,191	100.9
North Dakota	2,511	904	1,520	168.1
South Dakota	3,217	1,158	1,683	145.3
Rocky Mountain Division				
Colorado	8,420	3,031	4,064	134.0
New Mexico	1,388	500	1,074	214.8
Wyoming	1,311	472	836	177.1
Southwestern Division				
Arkansas	4,554	1,639	3,290	200.7
Louisiana	8,242	2,967	3,615	121.8
Mississippi	3,568	1,284	1,936	150.7
Oklahoma	10,531	3,791	8,011	211.3
Texas	26,903	9,685	23,009	237.5
Totals	1,010,506	363,782	535,583	147.2

LIGHT AND VISION—THE BUSINESS PARTNERSHIP

By M. E. SKINNER

Niagara-Hudson Power Corporation—Chairman, National Better Light—Better Sight Bureau

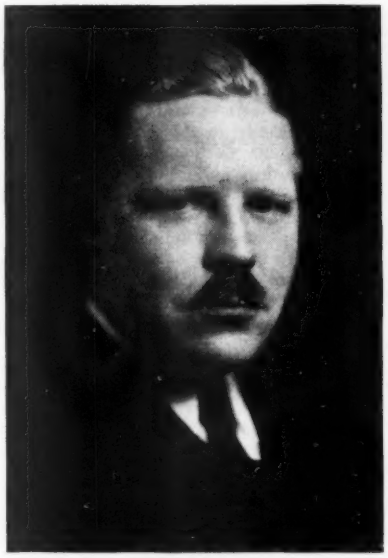
Presented before the Second Annual Convention of the Edison Electric Institute, Hotel Traymore, Atlantic City, N. J., June 6, 1934.

It is just a year since it was proposed that the industry do something in a big way about its lighting business. Those of you who were present at the Chicago convention last year will recall the emphasis given to lighting subjects in the commercial session both in amount of time and by means of the dramatic presentation of the sales value of the so-called Sight Meter. It was there, you will recall, that the suggestion of a national lighting activity was first offered by the sales committee, through its chairman, Mr. Whitwell.

The enthusiastic endorsement of this suggestion by those present at Chicago was an augury of the success which was to attend the activity. Shortly after the convention, the committee offered the slogan, BETTER LIGHT—BETTER SIGHT, and, through the medium of its newspaper, *E.E.I. Lighting News*, began flooding the country with suggestions for local action. In spite of the short time between the convention and the fall lighting season and the limited funds available, early fall saw the greatest concentration of sales effort on lighting in the history of the industry. The committee resources may have been limited as to funds, but they made up for it in enthusiasm, and as Freeman Barnes and Joe O'Brien began to spread the story through the advertising and publicity channels of the lamp companies a crescendo of active interest developed.

Soon we began to hear of fine programs adopted by this or that company and this news in turn encouraged others. Publication of results of early activities in *E.E.I. Lighting News* provided the final compelling urge for the skeptics. The judgment of the sponsors that a lighting activity would prove timely had been completely vindicated.

The early activities most frequently took the form of lamp bulb sales, as these were easy to organize on short notice, but as fall wore on the programs developed in elaborateness and comprehensiveness until every field of lighting was included. Manufacturers of commercial lighting fixtures were probably the last to feel the influence of the activity, but by March, I was receiving reports of substantial orders placed for this class of equipment and credited entirely to the BETTER LIGHT—BETTER SIGHT movement.



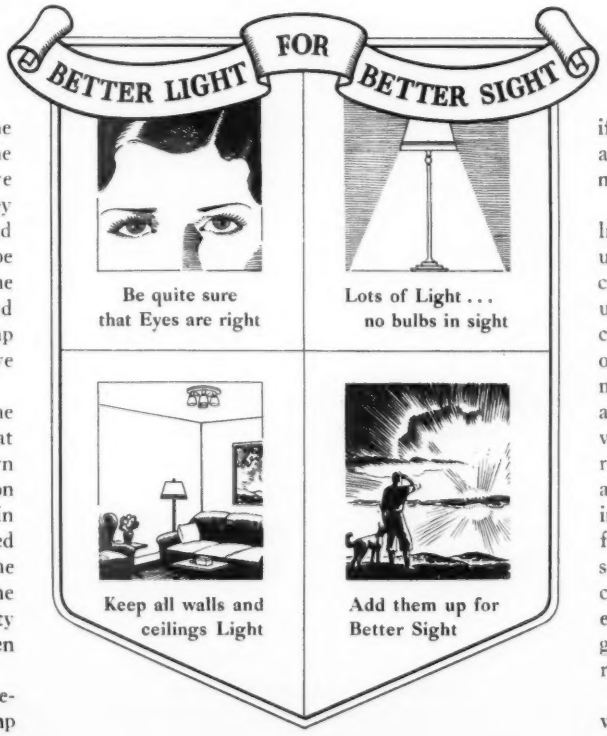
MR. SKINNER

Now, just what was responsible for the widespread and enthusiastic acceptance of the idea? It certainly was not put over by sheer weight of advertising pressure, for the total expenditures of the committee did not exceed $2,500. What the committee did do was to organize and correlate the effort of all interested parties. It served as the cheer leader in organizing a united support back of the lighting team.

However, loud cheers by themselves do not win games, and the BETTER LIGHT—BETTER SIGHT activity would never have succeeded if it had not had within it basic and fundamentally sound business principles.

In the whole history of the lighting business we have never until just recently had any really compelling sales arguments based upon scientific research, or any convenient instruments to demonstrate them. These two elements—selling built on science, and ability to demonstrate convincingly—were basic and were responsible for the success of the activity. Occurring almost coincidently with the suggestion for a lighting activity, the first serious recession in per customer consumption provided the necessary executive stimulus to get going. The combination was irresistible.

How could anything fail which contained five such essen-


BETTER LIGHT FOR BETTER SIGHT
Be quite sure that Eyes are right
Lots of Light . . . no bulbs in sight
Keep all walls and ceilings Light
Add them up for Better Sight

tial qualities as timeliness, necessity, research background, effective demonstration and enthusiasm?

The business partnership between light and vision is so fundamental that it touches other great industries beside our own. On behalf of the Institute I am glad to welcome the representatives of several of these important, interested groups, who are with us today. An important branch of the medical profession is concerned with the care of eyes and the treatment of eye diseases; another group is engaged in measuring, prescribing for, and correcting refractive errors in eyes. These professional services are backed up by a powerful manufacturing industry supplying optical glass, testing equipment, etc. No one can question the interest of this group in anything pertaining to vision.

We who have studied lighting are very conscious of the important influence of surroundings on the production of useful light, but we did not anticipate the keen interest which the paint industry would find in our program. Paint manufacturers discovered very quickly that the arguments in favor of BETTER LIGHT FOR BETTER SIGHT could be used for selling paint to brighten up walls and ceilings and thereby increase the effective output of lighting fixtures and equipment.

The interest in our program even extended to such organizations as the National Safety Council, who immediately appreciated that as we improved lighting conditions so that we could see better, we would be working in the direction of greater industrial safety.

In that connection, it is appropriate to mention, particularly since we are meeting in the State of New Jersey, a demonstration installation of highway lighting, installed on Route 33 between Asbury Park and Freehold which is dedicated to BETTER LIGHT—BETTER SIGHT and—GREATER SAFETY. Those attending the convention and traveling by motor will probably find it interesting to traverse this route and observe not only the technical features of the installation but also the compelling sales messages which have been used along its course to drive home this important phase of the business partnership between light and vision.

In our work last year we discovered that it was frequently difficult to secure lighting equipment that had kept abreast in design with our rapidly increasing knowledge of how we see. This was particularly true in the portable lamp field. The matter was taken up with representatives of the portable lamp and shade industry, who proved to be very receptive to suggestions for improvements. A joint committee was set up to prepare specifications in regard to the effectiveness of different types of lamps. Their work is rapidly nearing completion and we expect to issue shortly a set of specifications which will serve as a guide to lamp buyers. We have the assurance of the portable lamp and shade manufacturers that they will see to it that lamps are put on the market which will conform fully to these requirements.

In the meantime a committee of the Illuminating Engineering Society had been working independently on a specification for a study lamp. This specification is a most complete one and with it they have developed a certification and labeling procedure which will insure that lamps so advertised actually conform to all the requirements. The identifying tag gives the correct wattage

LIGHTING PROGRAM TO BE EXPANDED

The nationwide lighting activity sponsored by the Edison Electric Institute, and inaugurated last fall, is to be continued during the fall and winter months of 1934-35 with an enlarged program, it was announced at the Atlantic City convention.

Lighting campaigns, extensive advertising, special training of sales organizations and general public educational activities, all built around the slogan, BETTER LIGHT—BETTER SIGHT, were planned last summer and carried out last fall and winter over the country by a large percentage of the various groups interested in its success.

The results were extraordinarily good and highly gratifying to the great majority of participants. So much so that a large number of utility executives and officials of other important allied groups have emphasized the advisability, the necessity, the advantages of not only continuing a Lighting activity, but to broaden its scope to cover all phases of the important subject—eyesight conservation.

The optical industry through its association, the Better Vision Institute, has for several years been conducting an extensive educational activity with the public on eyesight conservation featuring the necessity of frequent eye examination and correction for good vision. Through the estimated 22,600 establishments with consumer contact the story of eyesight conservation is constantly being told.

The paint industry, through its Clean Up and Paint Up Campaign Bureau, has for 22 years been telling the public of the advantages of bright walls and ceilings. More recently the benefits of proper reflecting surfaces have been a keynote in its promotion as being of great contribution toward better vision and eyesight conservation

The National Safety Council has long advocated the use of better vision devices and facilities as preventives of risks and accidents that result unnecessarily in thousands of deaths annually.

The National Society for Prevention of Blindness, a great philanthropic organization, has since its inception been pleading the cause of eyesight conservation with better vision facilities, particularly among parent-teacher associations, school boards and child welfare groups.

The electrical industry, realizing the great humanitarianism of eyesight conservation and the important part that good lighting contributes to its progress, has adopted eyesight conservation as its theme and objective in promotions of adequate and proper lighting for Better Vision. With all of these and several more important and powerful associations and groups, having a common objection—eyesight conservation—it was inevitable that they should band together into a concentrated plan and program. This is now being done through the *National Better Light—Better Sight Bureau*.

The *National Better Light—Better Sight Bureau* is composed of representatives from each cooperating industry and group. Bureau members will head the individual industry committees. An executive committee representative of the industries furnishing financial support to the Bureau will be appointed.

At the Bureau's headquarters, 420 Lexington Avenue, New York City, a liaison office to aid in coordinating the activities of all participating groups has been established, with a manager and staff appointed. Each industry will appoint a committee to coordinate the activities of that group and to be the point of contact for the manager and staff. Plans and programs of participants, ideas, suggestions, and exchange of information between cooperating groups, will be reported in the monthly, *Better Light—Better Sight News*.

The Bureau will make available for local use lecture material, plans for contests, radio continuities, literature and display material, which may be used in common by all groups —all with the *Better Sight* theme.

With defective vision known to be a real menace to the health, happiness and efficiency of tens of thousands of men, women and children, the campaign platform adopted by the *National Better Light—Better Sight Bureau is*—

Our Eyes

Plus Correction Where Needed . . .

Plus Adequate Light, Properly Shaded and Directed . . .

Plus Proper Reflecting Surfaces on Walls and Ceilings . . .

Equals = Better Sight

bulb to use with the lamp to secure the desired results. We heartily commend to you this new study lamp and urge that each and every one undertake to promote it actively in your territory. It is attractive in design and very reasonably priced. If the volume of production builds up as our committee feels that it will, the price may come down still more.

Since the Illuminating Engineering Society had already committed themselves to the sponsorship of the study lamp, we felt it best to leave in their hands the development of similar specifications covering indirect and semi-indirect floor lamps. This work is well under way and I believe it is safe to say that full specifications with certification and labeling procedure will be available soon on these two very popular and important residence lighting units. They will both be built around the new 100-200-300-watt double filament lamp which was specially designed for this application.

The Better Light—Better Sight committee is working in full harmony with the Illuminating Engineering Society and the specifications which we will issue will be identical with that portion of their specifications which deals with lighting effectiveness requirements.

I cannot overemphasize the importance of these new developments in portable lamps. The manufacturers have cooperated splendidly and they deserve all the support we can lend in merchandising these new models which so fully meet our requirements. Working with them, it should be possible to banish forever some of the atrocities which have sometimes—usually innocently—been offered by retailers as reading lamps. Working cooperatively, it should be possible to develop such an outstanding public interest as will result in thousands upon thousands of new and active lighting outlets in homes throughout the land. Better Light for Better Sight will take on a new and more practical meaning to the families served by our industry.

* * *

Early this spring our committee began to receive inquiries as to a lighting program for next fall and winter. Everyone took for granted that an activity which had started so auspiciously would be continued.

The plan is ready—I believe it is as comprehensive and complete as any developed in our industry. No words of mine can do it justice or give you an adequate picture of the nationwide movement that is actually under way.

So if you will sit back and relax from the tedium of hearing my voice, we will bring you, with the assistance of radio station WPG and members of the cast of the March of Time program, a dramatic word picture of the fast-moving events which are shaping this national program of Better Light for Better Sight.

(EDITOR'S NOTE: Duplicate records of the radio presentation referred to by Mr. Skinner may be obtained from the Better Light—Better Sight Bureau, Edison Electric Institute, 420 Lexington Ave., New York, N. Y.)

CREATURE vs. CREATOR

(Continued from page 208)

whereas the living thoughts that emanate from the pulsing brain of an unknown poet, a humble scholar or an obscure statesman may survive and influence generations yet unborn. We failed to realize that other nations had flourished and were in their times as great as ours. History should have proved to us that materialism counts but little."

Certainly there was "big business" and great moneyed interests in Greece and Rome—but can anyone here name a banker, a manufacturer or a business man of Greece? No! But you have all heard of Demosthenes, of Homer and of Socrates. Can anyone here name a banker, a manufacturer or a business man of Rome? No! But you all know of Caesar, of Cicero and of Virgil. So I say that the only things that live on are the things of the mind, the soul and the heart. I think we have not distinguished between Bigness and Greatness. The biggest things in the world have not been the greatest. I read somewhere an article by John Carlisle that said you could take six things out of Heaven and Earth and the world would be poor indeed. Take out the Athens of Pericles. Take out Palestine. Take out Florence of the Renaissance. Take out Elizabethan England. Take out Switzerland and New England. None of these were big things, but you have taken out six of the greatest things in the Universe. The Athens of Pericles had only a population of 50,000 souls—Palestine is no larger than Massachusetts—Florence was a small city and Switzerland one of the smallest countries of the world—Elizabethan England could have been set down in the State of New York, and all New England is not so large as Oklahoma. But what have you taken out? You have taken out the glory and art of Greece. You have taken out the Christ of Palestine. You have taken out the learning and glory of the Renaissance. You have taken out Elizabethan England and Shakespeare. You have taken out a Geneva and the Reformation. You have taken out New England and her pilgrims and patriots. No, the biggest things in the world have not been the greatest.

I am led to believe in the new era before us the average individual will have more time for leisure, and we hope will get more out of life.

Kipling pictures paradise as a place "Where no one shall work for money and no one shall work for fame, but each for the joy of the working, and each in his separate star shall paint the thing as he sees it for the God of things as they are."

If this be a true concept it points to a life more abundant.

A preacher was once called to fill a nearby country pulpit. He took his little boy with him. As they entered the vestibule the minister noticed the contribution box near the door, reached in his pocket and put in a coin and went on his way to the pulpit. After the sermon was over, the old preacher took his boy by the hand and started up the street to go home. The sexton called him back and said, "Parson, we are accustomed here to give to the supplying minister the contributions in the box." So the sexton unlocked the box and the preacher put his hand in and pulled out only the very coin that he, himself, had put in. And the boy, standing beside him, said, "Dad, if you had put more in you would have taken more out."

May I say to you in closing—we get out of life just what we put into it, so that if you put more into life you will take more out.

REDDY KILOWATT

The new promotional tendencies of electric utilities in different parts of the country are reflecting themselves in modern applications of sales and advertising methods.

© Ash Collins

A new program, embracing policy, sales, advertising, departmental cooperation, employee enthusiasm, in a unified and simplified portrayal of electric service to the public, has recently been adopted by a number of companies, including: Philadelphia Electric Company, Pennsylvania Power and Light Company, Ohio Edison Company, Tennessee Electric Power Company, Alabama Power Company.

This program, called the Reddy Kilowatt Program, is built around a symbolic character representing the electrical servant and converting the technical kilowatt hour into a servant hour.

It is being used in newspaper and billboard advertising, window display, direct mail, etc.

The program provides an interchange of ideas and material between the companies using the service.

The character, which is flexible in its application, flags attention through its unique body symbolizing electricity, its lamp bulb nose and convenience outlet ears, thus capitalizing the popular definition of electricity and giving subtle advertising appeal to the basic services of the industry, namely, more light and more outlets.

This advertising, to date, is reaching approximately 1,300,000 homes. A marionette show dramatizing Reddy Kilowatt was on display at Atlantic City during the convention.

GETTING BUSINESS

(Continued from page 201)

applications commonly known as strip heaters or midget load-builders. These activities can be carried on in cooperation with several manufacturers and the results are always uniformly important. Since January 1st, 1932, in one large company, approximately 1600 kw of load have been obtained with an estimated annual revenue of $75,000. Small as these heating devices are, often only 3 or 4 kilowatts each, they are not to be overlooked as load-builders. Their adaptability makes the number of applications almost limitless.

Also, commercial cooking and baking still offer great possibilities for development. As an introduction thereto, portable electric cooking equipment should not be disregarded because very frequently this equipment is the salesman for commercial electric cooking and a larger installation follows.

And now, in conclusion, let us get back to the conundrum which I asked at the beginning of this perhaps too long presentation. You will recall that the question was "Why don't old ladies like moving pictures?" and the answer is, "Tall ladders make them dizzy!" I am convinced that a number of you still do not see any point in that answer. The reason is that you are assuming that "moving pictures" means "movies," whereas in this instance moving pictures means the moving of a number of pictures from their present places on walls to other places on perhaps other walls. Such relocation of pictures requires the use of ladders and the use of ladders makes old ladies dizzy.

May I leave with you the thought that your sales departments can get the sales of electricity that the industry must have if they are not too greatly hampered by tradition or by preconceived ideas that may have been satisfactory in the past but will not do today. Exactly as many of you associated "moving pictures" with "movies" because this has long been your custom, so many a utility sales department today is hampered by company sales, engineering, operating and accounting practices that long may have been sound, indeed still may be, but, in the interest of present greatly enlarged load-building necessity, must be modified if the best over-all good is to result. Remember that our opponents, political and otherwise, are alert, active, vocal and frequently unscrupulous.

Money must be spent; better understanding with customers must be obtained; and, above all, the tremendous value per dollar to the customer of electrical service, together with the smallness of the sums now required in homes for the accomplishment electrically of common household tasks, must be everlastingly and unremittingly repeated in simple terms so that our customers cannot fail to appreciate how greatly it is to their best interests to use ever increasing quantities of electricity."

FACING COMPETITION

(Continued from page 196)

said, be undertaken on a national scale. Surely we have learned by this time that while the utility companies operate in localized communities the thinking which influences their sales standing and reputation is largely nation wide. Each company is in a sense competing with every other one. No one can long afford to be far behind the leaders. Maintaining position is one of the essentials of success in competition.

At the moment, the Government is actively undertaking a number of large power projects. They will have the advantage of lower cost capital and probably somewhat less, if any, taxation. This is competition which private enterprise can meet only with increased activity and greater efficiency. It is of the utmost importance that advantage be taken of every possible, sound, load-building plan. We can count upon present larger domestic users of electricity to continue their requirements. Having learned from experience the great value and usefulness of electrical home servants, they will not willingly give them up. But these are only about one fourth of the total number. Our big job is to sell the other three fourths. They are homes with lower incomes and they cannot afford payments of $10 or $8 or even $6 per month. We must make terms to come within their means. There is no other way.

It will disturb the established routine somewhat to adopt the plan I have recommended here and elsewhere. There are some little difficulties in the way. I can drum up objections to it myself. It is easier to do nothing. But if we want to face today's competition, win more friends, spread electricity and its benefits into the great number of American homes, give more service to more people and at lower costs—if we want to accomplish these things, this, I think, is a practical, sound and economical way to do it.

NORTHWEST ASSOCIATION NEWS

By BERKELEY SNOW

The engineering and operation section of the Northwest Electric Light & Power Association held its eleventh annual general meeting in Portland, May 17 and 18, 1934. L. T. Merwin, vice-president and general manager, Northwestern Electric Company, Portland, opened the meeting and was followed by O. B. Coldwell, vice-president, Portland General Electric Company. These two executives set the stage for the papers and discussions to follow. Representing the engineering staff of Edison Electric Institute, J. O'R. Coleman told of national trends in engineering thought and experimentation.

A feature of the program was the discussion of the federal hydro-electric project on the Columbia River at Bonneville by C. I. Grimm, chief civilian engineer for the Army engineers constructing this project, and a description of some of the tests now being conducted on draft tube and scroll design for the 60,000-hp Kaplan, adjustable-blade, propeller-type turbine to be installed in this development by H. L. Cooper of the engineering staff.

A new method of effecting service entrance to residences, using the inverted sequence metering with the new three- and five-wire service entrance cable, was suggested by S. B. Clark, Northwestern Electric Company, and illustrated by actual installations of this equipment. This new method was shown to be practically immune from jumpering. Related to the latter phase of this subject was a paper on preventing energy theft by L. D. Snow, Puget Sound Power & Light Company, which concluded that an expense of $50 to $60 per customer suspected of energy diversion was justified to correct such diversion.

Two papers on power factor, a resume of present conditions on power systems in the Northwest by O. D. Lanning, Eastern Oregon Light & Power Company, and the effect of low power factor loads on distribution feeders by John Bankus, Portland General Electric Company, brought forth a discussion which generally leaned toward the theory of charging the customer for the reactive kv-a.

Other subjects pertaining to the work of the transmission and distribution committee were discussed as follows: effect of sale of off-peak power on transmission and distribution systems by M. T. Crawford, Puget Sound Power & Light Company; and a resume of practices relative to line and service interruptions by L. R. Gamble, The Washington Water Power Company; and results of asphalt emulsion treatment on pin-type insulators to correct radio interference by H. H. Schoolfield and Ellis Van Atta, Pacific Power & Light Company.

Among hydro operating problems, an exhaustive paper on experiences of The Washington Water Power Company with protective coatings for the insides of steel pen-stocks and surge tanks, by J. S. McNair of that company, came to the conclusion that coating such structures with certain grades of biturine enamel or similar coating was economic from the standpoint of prolonging the life of the structures and increasing the efficiency of the plant. Other subjects in this part of the program were trash handling on the Snake River by E. A. Woodhead, Idaho Power Company, and problems in water conveyance by Harry Olsen, The California Oregon Power Company.

Among the operating problems in the steam prime movers field was a discussion of the rehabilitation of a 3750-kv-a turbine by J. H. Siegfried, Pacific Power & Light Company; operation of steam stations on floating standby by L. A. Morphey, Northwestern Electric Company; and design and construction of a desuperheater by R. F. Miller, Portland General Electric Company. Various factors entering into the operating and maintenance cost of Diesel engines were discussed by A. H. Greisser, Portland General Electric Company.

A number of load-building opportunities somewhat unusual in character were described as a feature of the utilization committee program by E. F. Pearson, Northwestern Electric Company. Developments in illumination and its sale and promotion were discussed by F. H. Murphy, Portland General Electric Company, as part of the utilization committee program.

Accident prevention records were brought up to date showing an increasingly good record in this field for the year 1933 among the utility companies in the Northwest. The favorable effect of an adequate medical department on safety activities of the company, as portrayed by Dr. Richard F. Berg, Portland General Electric Company, created particular interest in the discussion of accident prevention work.

The complete proceedings of this meeting with all the papers and discussions are printed in June issue of *Electrical West*, published by McGraw-Hill Company of California, 883 Mission Street, San Francisco.

ADJUSTING OPERATIONS

(Continued from page 205)

lowering of all of the costs of rendering service coupled with an increased use of electricity. While the decrease in the cost of our product, presented to our customers through the proper forms of rates, will naturally encourage greater sales, they will not be obtained without effort, and there still remains a very definite sales problem which requires active promotion. However, when action is taken toward expanding sales efforts at a time when most other functions of a utility are being curtailed, care must naturally be taken to avoid demoralizing the organization, for in the very nature of things at a period such as we have been going through employees are suffering along with the other citizens and the morale is at a relatively low ebb. This problem, it is felt, can best be met through efforts tending to create sales consciousness on the part of the entire organization, so that:

1. The personnel will be generally helpful to the sales force and will turn in a large volume of prospects.
2. The other employees will sense the need of such expansion of the sales personnel as may be deemed necessary.
3. It may be understood and appreciated by each employee that his own welfare is dependent largely upon the results produced by sales activities.

From our own experience we are confident that this sales consciousness may be developed in the rank and file of employees and that total sales may be appreciably increased by such a program of having the entire personnel become active in some form of employee sales promotion. For, after all, probably the most important undertaking before all of us in the utility business is to increase the kilowatt hour consumption per meter by bringing about an increased use of the every-day conveniences available to our customers, and the combination of adjusting operations to present trends, resulting in improved customers' service as well as lowered costs, coupled with the complete company sales action, is the means to the desired end.

INDUSTRIAL HEATING NEWS

Contributed by Industrial Power & Heating Committee, E.E.I.

STRIP HEATERS IN STORAGE BATTERY MANUFACTURE

In the manufacture of storage batteries the plate grids are filled with sensitive material which has been mixed with water in order to make a paste that can be thoroughly worked into the grids. The moisture must then be driven from the plates in order to produce the finished dry plates. This operation is performed in a room where the plates are supported on racks. This drying process must be closely controlled, as too rapid evaporation of the moisture would cause the material to check and crack. In performing this drying process, the Perry Battery Company of Flint, Michigan, have perfected a drying cycle with the use of six 500-watt strip heaters mounted table fashion in order to provide the necessary heat with which to complete the drying process.—*Submitted by Consumers Power Co., Jackson, Michigan.*

ELECTRIC HEAT FOR PROOFING BOX IN PROGRESSIVE BAKERY

The manager of an up-to-the-minute bake shop wished some means of supplying steam to a proof box. After considering the gas and electric ideas, he chose the electric. A 1 kw "Dip" in a small water pan, plus an ordinary switch, was all the equipment necessary. He is very well satisfied with the results obtained. The advantages of the installation are: no odor, clean, and plenty of steam with very little excess heat in the box.—*Submitted by Consumers Power Company, Jackson, Michigan.*

SUPPLEMENTARY HEAT FOR OFFICE SHOWS BIG SAVING

A small box factory was working three days per week in the factory. However, the office force was on the job six days a week. The manager decided that firing the boiler was a very expensive method of heating the office alone when the factory was shut down. He consequently investigated electric air heaters and with the help of the Power Company constructed a 7 kw heater. This was assembled with "strips" and an ordinary fan. The heater does a nice job of heating the office even on very cold days and the savings shown over the former boiler method are very considerable. — *Submitted by Consumers Power Company, Jackson, Michigan.*

SMOOTHING VASELINE BY ELECTRICITY

Many times we have had occasion to put a little grease or something of the kind in a small jar, and every time we have wondered why we could not seem to make it look as nice and smooth as it does in the original package.

A cosmetic manufacturer gave us an answer when he asked for a simple, inexpensive way of heating vaseline just enough to make it run smoothly into little jars.

Two oil immersion heaters were installed near the bottom of a steel drum. A simple flange mounting did the trick, and made the joints oil-tight. Just above the level of the heaters, a filling valve was tapped in. With the valve above the heaters, the units are always kept completely immersed, and the possibilities of a burn-out are minimized. The unit needs to be turned on for only a few minutes to fill a great many jars, and a red lamp connected in the heater circuit is a constant reminder that the heat is on.

An installation like this is one of the simplest ways of solving heating problems, and besides being economical the heat is confined to the place at which it is needed. — *Submitted by Commonwealth Edison Company, Chicago, Illinois.*

STERILIZATION FOR HOSPITALS

A hospital needed a small amount of steam for sterilizing purposes in a laboratory near the operating rooms. To pipe a steam supply from the main boilers in the basement, several floors below, was an expensive proposition and none too efficient. Then, too, there would be times when it would be necessary to keep up steam in the main plant for no other reason than to supply that very limited amount.

In a little workroom next door to the laboratory, a small electric steam generator was installed at a cost much lower than would have been the case for piping from the basement. Automatic control is provided for the water immersion units installed in the small boiler, and steam is available whenever it is needed. The cost of operation is small, and the cleanliness of the installation is consistent with the requirements of the hospital.—*Submitted by Commonwealth Edison Company, Chicago, Illinois.*

ELECTRIC HEAT SPEEDS UNLOADING OF ASPHALT FROM TANK CARS

Mexican asphalt, which has a melting point of 225° F., has long been a source of trouble to roofing manufacturers, particularly from the standpoint of unloading from tank cars. When loaded into the car, this asphalt is heated to from 450° to 600° F., but in transit a portion of it cools and settles to the bottom of the car, obstructing the valve through which it must be pumped out.

Tank cars used for this purpose are equipped with steam coils to provide heat to clear the valve. Unless superheated steam is used, however, the process is very slow. Several schemes have been worked out to speed the unloading, but all have proved very expensive.

One large plant decided to try electric heat. Three 4 kw electric heating units were mounted on 10-foot pieces of 1-inch conduit. On the opposite end of the conduit, a heavy duty plug was installed, so that plug connections could be made from a nearby building.

When a car of asphalt arrives at the company's plant, the man-hole cover is removed, the units inserted, and pushed down as close to the valve as possible. Steam connections are also made. Within an hour or two, the material around the valve is so thoroughly melted that the pumps may be put in operation. The heaters are left in place during the 8 to 12 hours of pumping to break up any lumps which might jam the valve.

Officials of the plant estimate that these electric heating units save about $100 per car in unloading costs—enough to pay for themselves in a very few weeks.—*Submitted by Commonwealth Edison Company, Chicago, Illinois.*

$200 INVESTMENT IN STRIP HEATERS FOR OIL PUMPER SAVES MORE THAN $3,000

When an investment in equipment of less than $200 results in a net saving of more than $3,000, that is news!

A large concern which operates a fleet of trucks made the investment in a home-made oil purifier. With it the oil drained from the crankcase of the trucks was reclaimed at a total cost of less than five cents a gallon. The purifier brings the oil up to a predetermined temperature, and inexpensive chemicals are added. The oil is then filtered off and used in the trucks.

Strip heaters are fastened to the oil tank so that there is good contact between the heaters and the surface of the tank. The entire tank, heaters and all, is then enclosed in a well insulated jacket, and the heat is thereby confined to the spot where it can be useful, and radiation losses are reduced to a minimum.—*Submitted by Commonwealth Edison Company, Chicago, Illinois.*

POWER SALES ITEMS

AIR CONDITIONING

"A Proving Home for Air Conditioning Investigations," by Elliott Harrington and Leon A. Mears. General Electric Review, March, 1934, pp. 138-147. General Electric Company, 1 River Road, Schenectady, N. Y., publishers.

The house in which these tests were made consists of 11 rooms, 3 baths and a sun porch, and is located under quite extreme temperature variations ranging from 104 degrees in the summer to 24 degrees below zero in the winter. This home is of ordinary frame construction and changes consist only of additions of storm sashes to all windows, awnings on sun porch, windows for special testing and ½ inch of rigid board insulation on the underside of rafters.

"More Kilowatt-Hour Sales from Air Conditioning," by Charles E. Michel. Electrical World, April 7, 1934, pp. 511-513. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

BREWERIES

"Utility Service Economy for Brewery Operation—2," by F. W. Boldenweck and Willard M. Woll. Electric Light and Power, May, 1934, pp. 27-30. Bennett-Watts-Haywood Company, 360 N. Michigan Avenue, Chicago, Ill., publishers.

This article deals with the modernizing of a brewery which formerly used steam for practically all of its operations. The modernizing with electric power, using steam only where an efficient heat balance could be obtained, resulted in a considerable saving in operating expenses. The authors have shown in detail the results of various tests which sold the brewery on the conversion to electric power.

BRICK INDUSTRY

"Electrical Lubrication." Power Plant Engineering, May, 1934, p. 209. Technical Publishing Company, 53 West Jackson Blvd., Chicago, Ill.

It has been found that when a current of electricity is passed through a mixture of clay and water the moisture is concentrated at the negative electrode. This feature is used in the brick industry in place of oil for lubricating molds and is much simpler than using either steam or oil. Another application in the ceramic industry is found in the case with which ceramic shapes may be heated by passing alternating current through them rather than using drying ovens or air circulation. The advantage lies in the fact that the heating is uniform throughout and prevents cracking. At present the cost is high and the use is limited to large or special shapes which ordinarily require considerable time for drying by conservative methods.

COMMERCIAL COOKING

"Tomatoes and Kilowatts," by B. M. Riker. Electric Light and Power, May, 1934, p. 31. Bennett-Watts-Haywood Company, 360 N. Michigan Avenue, Chicago, Ill., publishers.

The author of this article points out the analogy between quantity purchase of tomatoes and electricity. He has pointed out that many restaurants and cafeterias could be completely electrified and result in less operating expenses due to quantity purchase of electricity. The author points out that there have been a large number of commercial kitchens converted to electric operation during the past year.

CONTROLS

"Co-ordination of Standard Controls Adequate in Quick-Reversing Service," by V. B. Wilfley. Electrical World, March 31, 1934, pp. 481-482. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

This article deals with the operation of standard equipment added to existing industrial equipment in order to provide automatic and semi-automatic controls. The author points out that it is not necessary to buy especially designed equipment in order to modernize various industrial motor applications. The desired results can often be obtained by using the proper combination of control and other electrical attachments to accomplish such operations as quick-reversing, automatic cutting, etc. A wide variety of facilities already available in standard patterns will convert many pieces of industrial equipment into automatic or semi-automatic machines.

CURRENT CONVERSION

"Relaxation Inverter." Power Plant Engineering, May, 1934, pp. 235-237. Technical Publishing Company, 53 West Jackson Blvd., Chicago, Ill.

This article outlines an improved technique of converting direct current to alternating current by utilizing one tube in place of two tubes as ordinarily used. By proper utilization of tubes and circuits it is also possible to obtain a higher direct current than the original impressed alternating current. Another application is that of converting directly direct current from a low to a higher voltage. At present the amount of direct current power which can be transformed in this manner is rather small, but undoubtedly, future development will enable direct current transformation to be made with larger amounts of power.

DIESEL ENGINES

"64 Diesels in One Plant Are Practical," by R. M. Schaefer. Power, May, 1934, pp. 232-233. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

A radical suggestion for industrial Diesel engine generating plants.

ELECTRIC FURNACES

"Induction Furnace Energy at Low Cost," by C. M. Laffoon. Electrical World, April 21, 1934, pp. 584-586. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

"Electric Annealing Slashes Strip Steel Rolling Costs," by P. N. Rugg. Electrical World, April 7, 1934, pp. 500-503. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

ELECTRIC MOTORS

"Multi-Speed Motors to Save Pulp-Wood Wastage," by F. A. Nicholson and L. A. Burque. Electrical World, May 5, 1934, pp. 650-652. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

"Material Handling Speeded Many Ways." Electrical World, March 31, 1934, pp. 476-477. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

INDUCTION MOTORS

"Effects of Capacitors and Varied Voltages Upon Induction Motor Characteristics," by F. O. Stebbins. General Electric Review, April, 1934, pp. 165-169. General Electric Company, 1 River Road, Schenectady, N. Y., publishers.

This article contains several curves accompanied by a very complete technical analysis of induction motor characteristics and how their power factor can be increased by the proper application of correct size static capacitors. It should be of particular interest to power men in the employ of companies which either penalize poor power factor or give discounts for good power factor.

INDUSTRIAL ELECTRIFICATION

"Better Veneer from Poorer Logs—Electrically," by B. A. Olson and K. L. Howe. Electrical World, March 24, 1934, pp. 438-440. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

MOTOR STARTING CURRENTS

"Motor-Starting-Current Steps Based on Connected Load," by Thomas J. Brosnan. Electrical World, April 28, 1934, pp. 608-609. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

REACTIVE KVA

"How Much Reactive Kva?", by Eustace C. Soares. Electrical World, May 12, 1934, pp. 692-693. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

STEAM PLANTS

"Goodyear Installs 800 Lb. Steam and Power Generating System," by Harry A. Davis. Power, May, 1934, pp. 225-228. McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York City.

Modernization of the Goodyear Tire & Rubber Company plant at Akron was accomplished by the installation of high pressure boilers and extraction type turbines, to supply power and process steam requirements.

Electric Refrigerators

(Continued from page 216)

has forged its way into the select circle of real quota-smashers.

Among the regional divisions the Southeastern continues to set the pace, while the Southwestern is a good second. The East Central and Middle West divisions are close together in their battle for third position, with the former holding a slight advantage.

In total unit sales in April, New York as usual led the way with 28,325. Pennsylvania again was second, but Illinois for the first time failed to hold third place, losing out to Ohio, which registered 20,267 sales as against 18,767 for Illinois.

The utility companies and local bureaus are taking more interest in cooperative dealer sessions than ever before, as is evidenced by the fact that more meetings have been held thus far this year than were held in all of last year. The schedule of Field Manager Allison is filled almost to the last of June, whereas in former years the end of May would see a discontinuance of dealer meetings until fall.

The June schedule includes meetings in Johnstown, Pa., on the 11th; Clearfield, Pa., on the 12th, and Duluth, Minn., on the 14th, while for the period from June 15 to 22, inclusive, a complete schedule for the territory of Northern States Power Co. in Minnesota has been arranged.

Annual Convention

(Continued from page 179)

advancement in the electric light and power industry, he saw great advances ahead in steam generation, transmission and utilization of electricity.

It has been the experience of the company with which he is connected, said Mr. Sporn, and of forward-looking companies in general, "that progressive engineering, going hand in hand with progressive management, can, even in times of stress, devise or help devise ways and means of effecting operating economies, and of cutting costs of such capital expenditures as have to be made, and that these economies will more than justify the cost of such engineering. In other words, progressive engineering can be made to pay its way."

Mr Sporn illustrated a number of engineering developments of the American Gas and Electric Company system as examples of how engineering developments result in a reduction of capital and operating costs and help expand electric service. Starting with the generation station, he proceeded through transmission and distribution to utilization with an imposing array of data to show what undeviating attention and continual acceptance of newer practices were doing to save money for his organization. Mr Sporn's paper, completely illustrated, will appear in the next issue of the Bulletin, together with the discussions of the paper by Messrs J. Allen Johnson, N. E. Funk and A. E. Silver.

The problems of increasing the sales of electricity, the meeting of competition, cooperation with other industries in the merchandising of electrical appliances and other subjects of related nature occupied the attention of delegates and speakers at the second general session, Wednesday, June 6th. The unusually large attendance of the chief executives of the light and power industry at this session, as well as of those whose primary concern is in the merchandising aspects of the industry, was indicative of the lines along which the interest of utility management is concentrated.

The principal speakers at the meeting were George E. Whitwell, vice president of the Philadelphia Electric Company and Chairman of the Sales Committee of the Institute; Allen L. Billingsley, President of the advertising firm of Fuller and Smith and Ross, Inc., Cleveland, Ohio; T. K. Quinn of the General Electric Company, New York; James E. Davidson, President of the Nebraska Power Company, Omaha, and M. E. Skinner of the Niagara Hudson Power Corporation, Buffalo.

The electric light and power industry must give more study towards increasing the consumption of electricity by the unprofitable customer, Mr. Whitwell asserted. In the average company, the unprofitable residence customers number about half of the total. These are the customers whose annual kilowatt hour consumption must be raised in order that rate reductions may be effected soundly. Any forced or expedient reduction at the present time to these small users will only aggravate the problem and increase the percentage of unprofitable customers, thereby rendering a further injustice to those whose increasing use entitles them to rate reductions in the lower blocks.

Mr. Quinn also believes that the industry must concentrate on the domestic consumer whose use of electricity is kept at a minimum. "The small current customer is a liability directly on the books of the company," he said, "because the cost of serving him is often greater than the gross payments he makes. But he is a much greater liability as a limited user who does not enjoy the value, usefulness or convenience of the service at his very finger tips. He is a greater liability as a potential user of the major electrical home servants, who should have them but does not. If he happens to fully appreciate their worth and is still without them, so much the worse."

Mr. Davidson declared that the utility company and the dealer in electrical appliances must go hand in hand, with greater profit to themselves and with greater service to the customer. "There have been power company executives," he said, "that have deemed it wise to step out of the merchandising business as merchants and depend solely on their dealers for merchandise sales, aided by active sales promotion on the part of their companies. I cannot endorse this viewpoint. I am still old-fashioned enough to believe that power and light companies can and should carry on their own merchandising programs, and at the same time coordinate their advertising and selling in order to be of utmost assistance to their fellow dealers."

People have come to credit electricity with being one of the chief agencies in stimulating the new developments in modern dwellings, Mr. Billingsley said, and whether a modern home is labeled "an electrical home" or not, the public expects to find electricity as the major means of monopolizing most of its advantages for livability, "the wise utility," he said, "will certainly regard the new house field as the first objective of electrical home promotion. If the new ideas in home construction have taken root in the public mind, it is our function to provide clear definitions of what constitutes an electrical home for the guidance of builders, architects and prospective home owners." Mr. Billingsley's address will appear in full in the next issue.

A dramatic sound and picture presentation of Light and Vision—The Business Partnership was made by Mr. M. E. Skinner, who is chairman of the National Better Light-Better Sight Bureau. Mr. Skinner was assisted by Station WPG and members of the cast of "The March of Time."

At the third general session, held Wednesday evening, June 6th, Mr. Frank A. Newton demonstrated how markedly general price levels have differed in the past few years from the trend in utility rates for electrical energy. By every test the rate policy of the industry was shown to have been continuously and most progressively fair to consumers, even to the point of complete conflict at times with other price-level trends.

It was the plea of Mr. J. L. Hecht of the Public Service Company of Northern Illinois that operating functions could well be planned and executed for better adjustment to present trends on many properties. Mr Hecht cited examples of things done by his own organization in furtherance of this viewpoint.

Announcement of the winners in the prize competitions administered by the Institute were made by Mr. Frank W. Smith, Chairman of the Prize Awards Committee, in his report for that committee.

A new technicolor talking motion picture, produced through the Southern California Edison Company, Ltd., was introduced by Mr. W. C. Mullendore of that company. The picture showed the service which the industry can perform and is performing in the case of the modern electric kitchen.

CONTENTS OF THIS ISSUE

The Institute's Second Annual Convention		177
The Institute's New President		180
We Shall Go Forward	*By George B. Cortelyou*	181
Price Levels and Sales	*By F. A. Newton*	187
Changes in E.E.I. Constitution		194
Facing Competition	*By T. K. Quinn*	195
The Business of Getting Business	*By George E. Whitwell*	197
Winners of 1934 Prize Competitions		202
Adjusting Operations to Present Trends	*By J. L. Hecht*	203
Creature vs. Creator	*By Hon. John J. Jackson*	206
Dealer Coordination As an Aid in Load Building	*By James E. Davidson*	209
The Second Decade of Rural Electrification	*By P. H. Powers*	213
April Sales of Electric Refrigerators Broke All Records for a Single Month		216
Light and Vision—the Business Partnership	*By M. E. Skinner*	217
Lighting Program to Be Expanded		218
Reddy Kilowatt		220
Northwest Association News	*By Berkeley Snow*	221
Industrial Heating News		222
Power Sales Items		223

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